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BONE-MARROW IN ANAEMIA FROM HAEMORRHAGE

W. Borchardt (*Deut. med. Woch.*, March 28th, 1930, p. 521) records the results of his experiments on young dogs in which anaemia had been artificially produced by the removal of about half their blood. In the first series some of the animals were fed with rib-marrow, others with marrow from the long bones. Control animals received a corresponding amount either of fat or of liver extract. The basal diet in each case contained a sufficiency of iron (5 mg. per cent.). Only the animals receiving the red rib-marrow showed a definite increase of weight, and their haemoglobin formation was more rapid than that of the others. In the next series the experiment was repeated, but the iron content of the diet was reduced to 1.4 mg. per cent. The result was similar but more striking, the dogs receiving the rib-marrow regaining their haemoglobin far more quickly than the others.

THIS extract from the "Epitome of Literature," published in the "BRITISH MEDICAL JOURNAL," dated May 3rd last, is important as representing, in 1930, a complete justification of the formula upon which

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Observations
ON
ANALGESIA AND ANAESTHESIA IN CHILDBIRTH.*

BY

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A CONSIDERABLE amount of discussion has been taking place in Britain as to the necessity for the provision of treatment for pain in so-called normal labour. Among medical practitioners the subject is a somewhat controversial one. It is obvious that one of the first principles of treatment in medicine is that when pain is present it should be relieved as soon as possible. Some, however, maintain that the pain of childbirth is an exception, and that any effort towards its relief is against the will of God. Had Sir James Simpson been influenced by the ecclesiastical arguments of his day we might not have had the benefit of chloroform narcosis in obstetrics or in surgery. In obstetrical practice it should be an axiom that pain should be relieved in every case when it does not interfere with the safety of the mother or child.

Anaesthesia in cases of complicated labour is a necessity when operative measures are indicated. This is not a controversial subject. It is in cases where labour, although looked upon as normal, is accompanied by pain and suffering, that women now demand relief. How far with safety can we give freedom from pain? A painless labour can never be safe, but a very considerable modification of suffering is within the scope of treatment of every practitioner. In the past little attention has been paid to the subject, but now women refuse to submit to the sufferings borne by their mothers and grandmothers. Not only do they demand relief for themselves, but in London a large and influential group of members of the public is providing resident anaesthetists for various maternity institutions, in order that the patients should be given relief, and that students and nurses should be trained in the advantages of childbirth conducted by humane methods of treatment. The agony of child-bearing is almost worse than any other suffering, and there must be some reason why the average practitioner does so little for its relief. In the first place, so little is known as to the risks of the administration of drugs in labour. Also, if analgesics and anaesthetics are to be given, they entail an additional expenditure of time on the part of the medical attendant. They also involve skilled assistance in many cases, and the expense may be almost prohibitive except for hospital patients and those among the well-to-do. But the question must be discussed and some solution found, since the public is insistent in its demand.

Sedatives tend to prolong labour rather than shorten it in many cases, by diminishing the expulsive forces of the uterine contractions. This adds to the risks of labour for the mother, but more especially for the child. We must therefore have a thorough knowledge of the action of sedative drugs, and only employ those which give the maximum of relief with the minimum of danger. The problem is intensified by the fact that childbirth differs from a surgical operation. Much depends on the temperament of the patient, her environment, and her uterine contractions. The process of labour is prolonged in comparison with surgical conditions, and two lives have to be considered. Some women have little or no suffering; others under the same obstetrical conditions suffer acutely. Each case must be treated individually, and experience and caution are necessary.

In the Report of the Government Departmental Committee on the Training and Employment of Midwives, which was issued in 1929, it was urged that some professional body should make a pronouncement as to the advisability and place in labour not only of anaesthetics, but also of analgesics and sedative drugs in general. A response was made by the British Medical Association, and a report of a committee was issued in April, 1930. The main expression of opinion was that of caution, and that any further expansion of the uses of anaesthetics and analgesic drugs in non-operative cases would be associated with danger to the mother and child. The question was left very much as it had been. The report may be of value in view of the present public agitation favouring the indiscriminate use of anaesthetics in all midwifery cases, but it does not give much help or encouragement to those of us who are anxious to relieve suffering whenever it is possible in obstetrical practice.

The opinion of this committee will be referred to later with regard to the use of special drugs. It is by frequent discussions between representative members employed in the practice of anaesthetics in obstetrics and in general practice that we shall in time gain useful information as to the most suitable methods to employ; we may eventually find the perfect method which will give complete relief without any risks to the two lives concerned.

The problems for discussion are the management of the stages of labour; the most suitable analgesics and their dosage for the first stage, and those for the second, combined or not, with anaesthetics; the differences between institutional and domiciliary practice; and the expense involved. We have also to consider the primary question: is relief of pain necessary in so-called normal labour? What are the dangers, complications, and the effects upon uterine contractions, retraction, and post-partum haemorrhage?

Although analgesia and anaesthesia may involve risks to the mother and child, I am firmly convinced that a considerable amount of our maternal death rate is due to lowered resistance from excessive fatigue, shock, and sepsis, the result of withholding relief during labour. In my clinic, where for the last nine years the use of sedatives, and, when necessary, light anaesthesia for the second stage and during delivery, is almost the routine method of treatment in ordinary labour cases, the patients are remarkably free from fatigue at the end of labour, and in a few hours show very little trace of their experience in the labour room. Mental suffering, especially fear, has an effect in lowering the resistance to shock and to sepsis. I am convinced that better results in the management of labour and in the reduction of maternal mortality will be gained by much greater attention to the relief of suffering in labour. Puerperal insanity can to some extent be prevented by the abolition of anxiety and suffering.

ANALGESIA IN LABOUR.

Analgesic or sedative drugs are administered in the first and second stages of labour, since pain is relieved without the loss of consciousness in most cases. Anaesthetics are employed to abolish consciousness, and they are used intermittently in the later second stage, while deeper anaesthesia is used during delivery. Deep anaesthesia is employed where operative measures are necessary.

In the first stage of labour no sedative, as a rule, is required until labour has become established and the patient is conscious of the discomfort of the uterine contractions. The general condition of the patient has to be considered, and also whether she is suffering from pain or only from anxiety and dread of the ordeal in front of her. Pain is felt in the back and abdomen, and she is restless and disturbed. The drugs most usually employed in the first stage are chloral hydrate, potassium bromide, opium and its derivatives, scopolamine, and numerous other sedatives, in combination or alone.

Chloral Hydrate.

Chloral hydrate in doses of 10, 15, or 20 grains is given by the mouth, or by the rectum in some cases; it is repeated as required. This is the rule for most sedatives in labour; no fixed time can be laid down, since patients and uterine contractions vary so much, but when pain is not present no sedative is necessary. Chloral hydrate is

* Made in opening a discussion in the Section of Obstetrics and Gynaecology at the Annual Meeting of the British Medical Association, Winnipeg, 1930.

usually combined with 10 to 30 grains of potassium bromide given in sweetened water. There is almost no risk to the mother or foetus, the cervix is softened, and labour progresses although the patient may be asleep. The doses can be repeated during the second stage.

It is said that free bromine in the stomach may cause undue sickness. Plenty of water should be given during labour in all cases. Sometimes the effect of these drugs is slow, or of little benefit, and other drugs have to be resorted to.

Opium.

Opium and its derivatives have been used from time immemorial. This drug is an ideal sedative from the patient's point of view, inducing restful sleep, arousing no anxiety or discomfort, and aiding dilatation of the cervix, and therefore exercising a beneficial influence on the progress of labour. It is most valuable in the slow dilatation stage in primigravidae. It rests a tired uterus, and contractions begin again with renewed energy. Opium itself, in the form of the tincture or liquor, is not pleasant to take, and it may cause excitement or sickness. Its derivatives, such as morphine sulphate, omnopon or opoidine, panopon, are much more efficacious in their results if given hypodermically in doses of 1/6 to 1/4 grain. Dissolved in a 50 per cent. solution of magnesium sulphate and injected into the buttock the effect is prolonged. The magnesium sulphate can be repeated without the morphine, and the sedative effect is prolonged.

With such an ideal sedative, why try any other? It is said that the effect of morphine upon the foetus is fatal in some cases, and its administration is limited to the first stage, or at least not within three hours of delivery. I have used omnopon for many years in the first and early half of the second stage of labour, and I have rarely seen any ill effects from its use. The foetal heart requires constant auscultation during its administration in the second stage. It accelerates labour, and frequently obviates operative intervention. It relaxes the pelvic tissues, and prevents the patient inhibiting her muscular activities, but it requires to be given by experienced practitioners. Browne, in the examination of 300 foetal post-mortem examinations, found that four deaths could be traced to morphine administration in labour.

Scopolamine-Morphine.

Scopolamine-morphine—twilight sleep—introduced by Kronig and Gauss in Freiburg in 1907, caused a wave of enthusiasm among obstetricians, but its use was so mixed up with advertising commercial interests outside the profession, and so little was known as to its effects and dangers, that the number of practitioners who still employ this method is somewhat diminished. It is not used extensively in Britain, America, France, or in Germany. The advantages of the combination of these drugs are that pain is relieved, and the patient has no recollection of any suffering. There is no marked ill effect upon the patient. The uterine contractions persist, progress in descent of the foetus takes place, and there is no additional risk of post-partum haemorrhage. The third stage of labour is shortened. The scopolamine-morphine must be given early in labour, since it is more difficult to narcotize the patient if she has had experience of severe pain. Most obstetricians give only the initial dose of morphine (1/6 or 1/4 grain), and repeat the scopolamine in varying doses—1/150, 1/200, or 1/450 grain—as indications arise. The chief indication is obtained by means of testing the patient's memory of various objects given to her to recognize. Scopolamine can be repeated up to delivery.

The disadvantages of this method are numerous. It is essentially a form of treatment for the hospital or nursing home, since it requires isolation, complete quietness, and skilled and constant attention. There is sometimes considerable excitement on the part of the patient, which may cause anxiety to her relatives if the confinement is conducted in her own home. She may suffer from thirst, headaches, giddiness, and eye symptoms.

The chief objection is that the foetus may become affected, and a stillbirth may result; most practitioners put this down to the initial dose of morphine. When successful the method seems ideal, but it can never become widespread, since it involves too much expenditure of time on the part of the practitioner, unless he has a special department with an experienced staff.

Scopolamine-morphine is not suitable if the labour is prolonged, or if operative delivery is necessary. Hyoscine is sometimes substituted for scopolamine, but it tends to prolong labour and to cause post-partum haemorrhage. A modified method of giving small doses of scopolamine during labour relieves pain to a great extent without inducing loss of memory; this does not require such constant attendance, and gives good results.

Adaline.

Adaline is valuable, given in doses of 5 to 10 grains by the mouth. I have had considerable experience of its use, and have seen no ill effects. It is easy of administration, and relieves pain in both stages of labour.

ANAESTHESIA IN LABOUR.

Although we look upon anaesthetic drugs as those which are usually administered by means of inhalation, there are other more local methods of obtaining relief from pain in childbirth, just as there are in surgery. It is somewhat difficult to classify the various anaesthetic drugs, since they differ according to their methods of administration.

The chief inhalation methods are those by means of chloroform, ether, and nitrous oxide gas.

Chloroform.

The administration of chloroform in surgical and obstetrical practice seems to be more or less geographical. In Scotland, the home of Simpson, it is more used than in England, where ether is the anaesthetic of choice. Some practitioners prefer ether for surgical operations, but show a partiality for chloroform in obstetrics. It is said that a pregnant woman is very tolerant of chloroform inhalation, and that it does not require such a skilled administrator as in the case of surgical conditions. This is probably due to the fact that chloroform anaesthesia is, as a rule, light and intermittent during labour—*à la reine*. Indeed, during the second stage, chloroform can be given by the patient herself in some cases. The usual method is to give a few drops on a mask and let the patient gently inhale it. As delivery approaches, the quantity administered is increased according to the degree of anaesthesia required. During expulsion, the most painful part of labour, complete anaesthesia may be necessary in some cases. In the third stage of labour it is not necessary to give an anaesthetic unless manual removal of the placenta is to be undertaken. For the satisfactory repair of lacerations it is, as a rule, necessary to anaesthetize the patient.

Chloroform has a soothing effect upon a nervous patient when given only in minute quantities in labour. It often causes the pains to become more regular, and it relieves spasmodic contractions of the perineum and other structures due to the fear of pain on the part of the patient. The more rapid advance of the presenting part can be observed in cases of light chloroform anaesthesia. During delivery more control is obtained, and therefore the risk of lacerations is diminished. The effect of an anaesthetic relieves to a great extent the anxiety of the patient's relatives.

The disadvantages of deep chloroform anaesthesia are difficult to estimate, since other factors, such as operations and complications, are usually involved. The uterine contractions may be diminished or abolished with the consequent prolongation of labour and the possibility of post-partum haemorrhage. Chloroform is contraindicated in cases of liver involvement, such as acidosis, toxaemia, and hepatic atrophy. In eclampsia chloroform is given to allay convulsions, but, if there is any serious liver involvement, its administration is accompanied by risk, and chloroform poisoning may ensue. In cardiac conditions chloroform may cause collapse and death; this is more frequent after delivery than during labour. The foetus is not much affected by chloroform unless the administration is prolonged or deep. It is said that chloroform is partly eliminated by the expulsion of the placenta. It should not

be given in a room with a gas fire, since decomposition of its elements may occur and death from poisoning result.

The committee of the British Medical Association recommends the use of pituitrin to counteract the paralysing effect of chloroform upon the uterine contractions. In my own experience this drug is dangerous in any case where there is delay in the second and third stages of labour. Its uses are mainly for haemorrhage after delivery of the placenta, and as a means of sensitizing the uterus in order to bring on labour.

Ether.

Ether is preferred to chloroform by many practitioners as it is said to be safer; this applies more to general surgery and deep anaesthesia than to midwifery practice. Extensive use is made of it in England, and especially in cases where chloroform is contraindicated; it can be given by the patient herself in small doses. Ether is pleasant to take, and often acts as a stimulant to the heart; it does not, as a rule, diminish uterine contractions, and is useful in cases of operative intervention, such as forceps, Caesarean section, and for the repair of lacerations. It has no bad effects upon the foetus if its administration is not too prolonged or deep. The disadvantages are that it is sometimes slow in action, and needs a special apparatus and a skilled administrator. The chief drawback is its irritating effect upon the respiratory passages; it is therefore unsuitable if pulmonary complications are present or there is oedema of the lungs, as in nephritis. Some of the risk can be reduced by giving ether in a warmed apparatus, but it causes more sickness than chloroform. Ether is inflammable, and care must be taken in domestic practice or in operating rooms where electric appliances, such as the cautery, are in use. Sometimes a mixture of alcohol, chloroform, and ether is given, but not so frequently as in surgical work.

Gwathmey of New York has advocated the instillation of an emulsion of ether into the rectum during labour in combination with the intramuscular injection of morphine in a solution of magnesium sulphate. This method has gained a number of supporters, and in some cases gives excellent results, which improve as the technique becomes more perfected; it is inexpensive, and is easily carried out in a private house. The instillation takes time, and undue excitement on the part of the patient may follow it. There is danger of irritation, and even of sloughing of the rectum, if the ether emulsion is not properly prepared. The amount of absorption of ether must vary to some extent, and cannot be regulated in the same way as by the inhalation method.

Nitrous Oxide.

The administration of nitrous oxide gas and oxygen is undoubtedly the most ideal method of obtaining anaesthesia in midwifery practice; it is safe, relieves pain, and does not interfere with the progress of labour. It may be employed during uterine contractions, and continuously towards and during delivery. It has no harmful effects upon the foetus. After birth, before the cord is severed, oxygen alone may be given in a case of asphyxia. The after-effects of gas and oxygen are negligible. This method is especially useful in short operations, such as induction, version, forceps delivery, and repairs. It is safe in toxic, cardiac, and pulmonary complications. It is recommended to begin with gas and oxygen, and to decrease the gas as each labour pain nears completion. The disadvantages are that the apparatus is expensive and cumbersome for private practice; a skilled anaesthetist is necessary. Sometimes the patient becomes excited and difficult to anaesthetize. If there is headache after the recovery of consciousness the mixture has contained too much nitrous oxide.

Ethylene.

A mixture of equal parts of ethylene and oxygen has been advocated lately by some American obstetricians (de Lee, Blevis). There is said to be no excitement, the induction period is short, and it is safe in cardiac cases. It has no irritating effect upon the lungs or kidneys. It is useful in light intermittent anaesthesia, and can be supplemented by ether for delivery. It has no ill effects upon the foetus unless prolonged. Its chief fault is that it is highly explosive.

Local Anaesthesia.

Local anaesthesia is advocated by some obstetricians, more especially for the relaxation of the tissues of the pelvic outlet. Rose, who employs novocain in both stages of labour, gives intradermal infiltrations of the abdominal wall in order to abolish the pain of the skin reflexes; in the second stage he injects it slowly into the perineal structures. He considers that lacerations are usually prevented, and that, if they occur, their repair is easily effected.

De Lee employs procaine combined with adrenaline as a local injection in Caesarean section operations. Browne uses local anaesthesia entirely for the immediate repair of the perineum, injecting 4 to 6 drachms of a 2 per cent. solution of novocain with 1 minim of 1 in 1,000 adrenaline solution to each drachm of novocain. The infiltration of the perineum and vagina is obtained by a hypodermic needle. Perfect relaxation and anaesthesia result without the discomforts which follow inhalation methods.

Spinal Anaesthesia.

Spinal anaesthesia is employed in surgical practice, and also in midwifery to some limited extent; it does not lessen uterine contractions or interfere with retraction, and therefore does not cause post-partum haemorrhage. It relieves pain by paralysing the pelvic area. There are no toxic effects upon the liver or kidneys, and it does not seem to harm the foetus. Burns especially advocates its use in Caesarean section, in cardiac cases. It has been found to give good results in cases of forceps, version, and breech deliveries. It requires a skilled administrator, especially in obstetrics, and in some cases its effects are very variable. Until it has been more widely employed it is difficult to give an opinion on its merits in midwifery practice, but there is no doubt that it has a place in cases where inhalation methods are contraindicated. It is not always sufficiently prolonged in its effects in the case of a primigravida. Headache is a symptom, but this can be prevented to some extent by using a very fine short needle for injection. The drugs most frequently employed are stovaine or novocain; cocaine is considered dangerous by most obstetricians. Much of the success of the method depends upon technique and the injection of the drug low down in the cord, so as not to interfere with the uterine contractions.

CONCLUSIONS.

Each maternity case must be given individual attention with regard to the most suitable sedative and anaesthetic to be employed. The age, parity, temperament, general health, and complications, if present, must all be carefully considered. Obstetrical anaesthesia is not quite comparable with the surgical form. The pain is prolonged, and has to be combated with sedatives as well as with anaesthetics; the effect of these sedatives must be taken into consideration when an anaesthetic is decided upon.

Light anaesthesia is of little use in surgery, while it is generally employed in midwifery practice, except in cases where operative intervention is required. The action of the uterus must be maintained, and haemorrhage after delivery must be prevented as far as possible. The expenditure of time, with its consequent financial complications, is a consideration. It is desirable that private patients should have the continuous attendance of the practitioner during labour, if sedatives or anaesthetics are to be given, just as in hospital practice; yet it is impossible to demand this unless adequate financial compensation is made by the patients for the loss of practice elsewhere.

In surgical practice only one life is involved. In midwifery the interests of the child are of great importance in uncomplicated cases where the only consideration for treatment is the relief of pain to the mother. Perhaps the safest sedative is chloral and potassium bromide, and the safest anaesthetic is gas and oxygen, from the point of view of the foetus.

It is a common mistake to carry out violent methods of artificial respiration if the infant does not breathe immediately after birth. We have to remember that it is narcotized to some extent, and requires time to recover; warmth, rest, and clearance of its respiratory passages are sufficient in most cases of delayed respiration, but CO_2 and oxygen should be given if there is any undue delay.

Many an infant loses its life from misguided methods of restoring animation, such as bathing and artificial respiration.

In England, where there is so much discussion at present as to the advisability of every woman in labour having relief from suffering, the question is, What is to be done about the patients under the care of midwives? These number about 60 per cent. of all the cases of the country. Are these patients to be excluded from all methods of relief from painful labour? Are they to be attended by an anaesthetist, and, if so, who is to bear the expense? If midwives are to be permitted to give sedatives, or even anaesthetics, it will involve general training in surgery and medicine and special training in sedative administration. This is a real problem, and the opinion of the medical profession is divided.

There is room for much reform in the management of labour by medical practitioners, and perhaps that is the first step to be taken. The agony suffered by parturient women is one which has called for relief throughout the ages; it should appeal to every humane individual in the medical profession.

RADIOGRAPHY DURING OPERATION FOR RENAL CALCULUS.

BY

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(*With Special Plate.*)

Is a so-called recurrent renal calculus really a recurrence, or is it a case of a stone, or a fragment of a stone, being left behind at the initial operation? Fortunately it is not common to have a recurrence, but cases do recur. Further, what ultimately happens to a kidney which is traumatized during the operation of nephrolithotomy?

For some years, whenever *x*-ray facilities have been available in the operating theatre, I have taken the opportunity of *x*-raying an exposed kidney which was either known to contain a calculus or was suspected of containing a calculus which did not show up on an ordinary radiogram. My object has been twofold: first, to locate accurately the site of the stone so as to damage the kidney as little as possible during its removal; secondly, to be certain by a further radiogram, after removal of the calculus, that no fragment has been left behind. Even a small calcareous fragment left behind is sufficient to form the nucleus of a further stone.

Where a calculus is concealed in a calyx it may not be possible to palpate it either through the solid tissue or through the pelvis of the unopened kidney. I feel certain that when the solid part of the kidney is incised for an adequate search—usually so that the *inside* of the renal pelvis can be palpated—the subsequent suturing up so constricts the blood supply that the incised portion of the kidney becomes functionless.

The *x*-ray apparatus which I use for this purpose is an ordinary Dean 16-inch coil set. It is kept entirely for work necessary during operations, and when out of use it is housed in a large airtight cupboard in the operating theatre. It can be mounted and ready for use in three minutes.

When operating in a renal case my patient lies on the sound side, with the diseased side uppermost. After exposure of the kidney, and when all bleeding points have been secured, so that the field is as dry as possible, the film, in its paper covering, is wrapped in a dry sterile cotton cylinder—that is, an arm sleeve—and placed in position. The film is pushed down into the wound in the case of a short renal pedicle, but there is usually no difficulty in persuading the kidney to lie upon the film while the skiagram is being taken. An exposure of one second has always sufficed. It is emphasized that the operation field must be *dry*, otherwise the film is ruined by the damp; further, that sepsis may permeate through the blood-moistened sterile towel and result in a pyogenic wound infection. A technician stands by and develops the film, which has usually been available in three minutes, never longer than five minutes, after its receipt. I have seen the method used of trying to view the exposed kidney through a fluorescent screen. The technical difficulties of screening, however, are greater, for the theatre must be darkened; the surgeon's eyes take time to become accustomed to the darkness before he can see adequately; and small calculi are apt to be missed. In my opinion, taking a film is preferable, as it is much more certain.

When the calculus has been located, and its size and shape noted, it is removed by the smallest possible incision. After its removal another radiogram is taken by a similar technique to verify the complete removal of the stone or stones. The kidney tissue incision is closed by catgut sutures and the wound area drained by a tube.

I have chosen four typical cases.

1. A case of renal colic in a very stout female, where ordinary radiography and pyelography failed to disclose a calculus. *X*-ray examination of the exposed kidney revealed a stone and its location. After nephrolithotomy a further radiogram showed normal shadows.

2. A calculus, previously seen by *x* rays, was accurately located by radiography of the exposed kidney at operation; a further radiogram was taken of the exposed kidney after nephrolithotomy.

3. A case of multiple calculi located at operation by *x* rays where, after all the calculi had been thought to be removed, a further radiogram of the exposed kidney disclosed a calculus left behind.

4. Eight years previously a small renal calculus had defied the surgeon at a nephrolithotomy until the kidney had been slit up from pole to pole. Pyelography showed that this traumatized kidney had become functionless, owing to strangulation of the blood supply by the catgut sutures employed in sewing up the kidney.

Particulars of these cases are recorded below.

CASE I.

On September 6th, 1928, M. W., aged 50, a very stout female, was admitted for investigation of acute attacks of left-sided typical renal colic. Radiography failed to show any abnormal shadows, despite good radiograms. Cystoscopy showed a basal cystitis with ulceration in front of both ureteric orifices, but particularly the left-sided one. The ureters were catheterized, and subsequent distensions of the left renal pelvis caused the acute pain of which she had complained.

Pus cells were obtained in the urine withdrawn from each kidney; the phenolsulphonephthalein excretion from the right kidney was 7½ per cent., compared with only 1½ per cent. from the left kidney. The blood urea was 60 mg. per 100 c.cm. The phenolsulphonephthalein test failed owing to only a portion of the dye reaching the vein. Pyelography showed a normal right pyelogram with a small degree of hydronephrosis of the left side.

A diagnosis of uric acid calculus was made, and the left kidney exposed by operation. A radiogram (Fig. 1) showed a small uric acid stone in the middle of the lower pole of the kidney. The calculus was removed through a small incision to the cortex. A further radiogram (Fig. 2) showed that all the fragments had been removed. The renal cortex was sutured with catgut; the patient made an uneventful recovery; no urine ever leaked from the wound.

Had the first radiogram of the exposed kidney failed to show a stone, the kidney of course would not have been opened.

CASE II.

L. W. B., aged 36, was admitted with a history of right-sided renal colic, from which he had been suffering for three years. It prevented him from carrying on his practice as a dental surgeon. *X* rays showed a shadow in the area of the right kidney. His blood urea was 60 mg. per 100 c.cm.

Cystoscopy showed a subacute cystitis. Urine obtained from each kidney by ureter catheterization was found to be free from pus on microscopic examination. Distension of the renal pelves by a measured quantity of fluid revealed that the capacity of the right side was three times greater than the left side. The phenolsulphonephthalein excretion of the right kidney was only 7½ per cent.; that of the left was 12½ per cent. Pyelography disclosed a normal left side, with hydronephrosis on the right side. Further, the shadow previously seen on the right side was incorporated in the pyelography shadow.

After exposure of the kidney the calculus could not be felt. The radiogram showed it to be in an upper calyx (Fig. 3). It was removed, along with a small calcareous flake. Another radiogram showed absence of any foreign body (see Fig. 4).

He made an uneventful recovery, without leakage of urine from the wound.

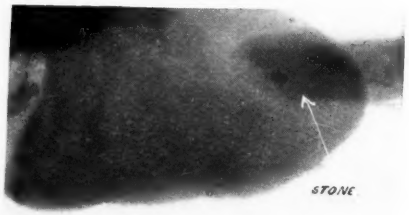

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 4.

FIG. 5.

FIG. 6.

FIG. 7.

DESCRIPTION OF FIGURES.

FIG. 1.—Stone before kidney was opened (Case I).
FIG. 2.—Radiogram taken after removal of stone (Case I).
FIG. 3.—Stone before kidney was opened (Case II).
FIG. 4.—Radiogram taken after removal of stone (Case II).
FIG. 5.—Calculi before kidney was opened (Case III).
FIG. 6.—One of the stones which had been missed (Case III).
FIG. 7.—Double pyelogram showing destruction of right kidney from previous nephrolithotomy (Case IV).

C. J. CELLAN-JONES AND KATHERINE M. CELLAN-JONES: A NEW PASTE BANDAGE FOR VARICOSE ULCERATION AND PHLEBITIS (*See p. 560*).

Deep varicose ulcer situated over the malleolus healed by injection of veins and application of bandage, a portion of which is seen in the second photograph. This is an example of a true varicose ulcer unaccompanied by phlebitis. Healing process occupied only three months.

Stages of healing of ulcer during a period of twelve weeks.

Large varicose ulcer in a very unusual situation. The second photograph was taken only nine weeks after the commencement of treatment, and shows the ulcer practically healed.

H. MARTIN GREY: FRACTURE OF THE FRONTAL BONE INVOLVING THE FRONTAL SINUS (*See p. 562*).

FIG. 1.

FIG. 2.

CASE III.

F. C., aged 26, was admitted on October 22nd, 1928. For four years he had been suffering from attacks of acute left-sided renal colic, which came on every four or five days. He had intense thirst, frontal headaches of the morning type, and had lost a great deal of flesh. The blood urea index was high, and the phenolsulphonephthalein excretion was low. The specific gravity of his urine was 1005, and contained albumin. *X* rays showed a number of shadows in both renal areas. As pyelography showed that the shadows fused with the pyelogram shadows, a diagnosis of renal calculus was certain.

A left-sided nephrolithotomy was recommended because of the severe pain, but it was clear that the total amount of renal tissue was so defective that nephrectomy was contraindicated. An operation was a serious undertaking, and had to aim at the least possible damage to the kidney.

The left kidney was exposed and found to be twice its normal size. None of the calculi could be felt through the renal tissue. *X* rays (Fig. 5) showed multiple stones, also their location. The incised part of the kidney showed marked deficiency of the normal renal tissue, which was largely replaced by fibrous fat. The stones were extracted, and it was thought that all of them had been removed. A further radiogram showed, however, that one rounded stone remained. It was easily located and removed (Fig. 6—the small shadow near the pelvis was a "fault" on the film; it does not show on the previous radiogram). The removed calculi were composed of uric acid.

The patient stood the operation well, but died from uraemia eleven days after. A post-mortem examination revealed that all calculi had been removed from the left kidney, while the other kidney contained multiple calculi and was in a similarly severely damaged condition. Despite the fact that the operation was performed quickly, with as little damage as possible to the kidney, the total renal tissue was insufficient to stand the strain.

CASE IV.

H. A. C., aged 52, male, underwent an operation for a right-sided renal calculus in 1920. The surgeon who performed the operation subsequently informed me that a prolonged search had had to be made for the calculus, and the convexity of the kidney was slit up from pole to pole. The stone, a small one, was ultimately recovered. In 1926 he developed attacks of acute left-sided renal colic with haematuria, and *x* rays showed a shadow in the left kidney area.

Seen by me in October, 1928, his phenolsulphonephthalein excretion was 55 per cent., while his blood urea was 38 mg. per 100 c.cm.—an indication of a good total renal function. Cystoscopy showed frequent jets of urine coming from the left ureteric orifice. No urine was observed coming from the right ureteric orifice. Ureter catheterization enabled normal urine to be withdrawn from the left kidney with a 10 per cent. phenolsulphonephthalein excretion in fifteen minutes, an indication of an exceptionally good renal function. No urine was obtained from the right-sided ureter catheter, and a subsequent investigation showed that the catheter lumen was patent. Double pyelography (Fig. 7) showed a normal left-sided pyelogram. On the right side the ureter and a rudimentary pelvis were shown distended with the solution of sodium iodide, but the calyces had vanished.

It is fair to assume, therefore, that the right kidney was so much damaged at the nephrolithotomy that it had become functionless. It is also fair to assume that had the method of *x*-raying the exposed right kidney at the time of the 1920 operation been available, the small stone would have been detected before the organ was opened, resulting in only a localized damage instead of the kidney being rendered completely functionless.

The operations in Cases i, ii, and iii were performed in a private hospital. The pyelogram of Case iv was made in the same establishment, but on a separate, more powerful, *x*-ray plant.

CONCLUSIONS.

1. Radiography of an exposed kidney is a method which has come to stay. It is helpful in guarding against the recurrence of a stone.

2. Detection of the exact site of a renal calculus by radiography is invaluable in preventing the needless sacrifice of renal tissue.

3. Illustrative cases are given: (1) of a previously known renal calculus; (2) of an occasion when a uric acid stone was suspected but whose presence could not be proved prior to radiography of the exposed kidney; (3) of a man in whom, after supposed removal of all the calculi, a remaining one was detected by radiography and removed; (4) of a sequel to a nephrolithotomy performed eight years before, the result being a functionless kidney owing to the extensive trauma at that operation.

THE TREATMENT OF PARANASAL SUPPURATION PERSISTING AFTER OPERATION.*

BY

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WHEN I agreed to take part in opening this discussion, I did so realizing that I had nothing original to offer and that I could therefore only give the results of my personal experience and perhaps, to some extent, emphasize what seemed to me to be the fundamental problems to be solved. I find that it is necessary to define the meaning of the subject chosen. We must presume that such operative intervention as has been carried out has been skilfully and adequately performed. The decision as to the adequacy of operation in such cases is, in itself, a difficult one. In considering this, I take it that ventilation and drainage of the affected sinuses are the essentials. In addition, in the case of the frontal sinus and possibly also of the antrum whose lining has been removed, complete obliteration may be produced. While ventilation and drainage will cure the majority of cases, it will not cure all, and obliteration has only a limited application. Confining, then, the scope of our discussion to cases in which further operation is not advised, I suggest a classification into two groups: (*a*) those in which there is some discoverable factor which is perpetuating the suppuration; and (*b*) those in which such a factor cannot be identified.

Dealing first with Group (*a*), I feel that this class merits some consideration, as I find that it contains an appreciable number of cases seen by myself. The undiagnosed factors of which I have had experience have been: the existence of a syphilitic or tuberculous infection; the existence of malignant disease; and the presence of a foreign body or of a bony sequestrum. The presence of an old-standing syphilitic infection is not very uncommon, and its recognition and treatment may be all that is necessary to clear up a case.

Tuberculosis is, in my experience, very much less common, but its occasional occurrence is exemplified by the following case which has recently come under my observation.

The patient, a woman aged 52, had had recurrent intranasal and external operations on the paranasal sinuses of both sides over a period of fifteen years without any relief. In addition to multiple operations, her frontal sinuses had been washed out over long periods, and the antra for twenty-five years. I found the nasal passages full of pus and crusts. The nasal mucosa presented a granulomatous appearance, and, on section, showed the typical histological picture of tuberculosis. In early life she had had tuberculous glands removed from either side of the neck, and this might have afforded a clue to the nature of the infection.

The occurrence of malignant disease, as a sequel to sinus suppuration, is not, I believe, very unusual. This combination tends to delay diagnosis, the previous existence of suppuration distracting the observer's mind from the malignant factor. I can exemplify this by the case of a woman, aged 46, who had worn an antro-alveolar plug attached to a dental plate for ten years, syringing pus out of the antrum daily. She consulted me, owing to aching and a slight swelling in the cheek on the affected side; when I had treated her for a period as a case of simple chronic suppuration, the existence of a squamous-celled carcinoma, involving the anterior wall of the antrum, became evident.

The type of foreign body most frequently met with is probably a tooth fragment in the antrum. I can best illustrate this occurrence by relating the following case, which has already been published.[1]

A man, aged 24, had been complaining for eight years of a right-sided frontal headache and offensive nasal discharge. Examination revealed a chronic suppuration in all the anterior group of sinuses on the right side. Intranasal, and later external, operations were performed without relief, but the suppuration cleared up rapidly following the spontaneous expulsion from the right side of the nose of a concretion, with a tooth fragment as a nucleus. This fragment had been present in the antrum since the extraction of a molar tooth at least ten years previously. After expulsion of the concretion, which had evidently passed out of the antrum into the nose, through the opening made at operation, a further and more careful

* Read in opening a discussion in the Section of Laryngology and Otology at the Annual Meeting of the British Medical Association, Winnipeg, 1930.

examination of the original skiagram demonstrated its presence in the antrum.

As to a sequestrum, we are probably familiar with cases, particularly of chronic antral suppuration, in which resolution is delayed after operation until the extraction or spontaneous expulsion of a fragment of dead bone.

The treatment of the cases in Group (*b*) is, I understand, the primary object of this discussion. We have to consider their treatment from two points of view—namely, local and constitutional. Possible methods of local treatment seem to be: repeated washing out of the sinus or sinuses; the use of suction to empty them; the application of antiseptic packs to prevent drying and to increase secretion; the use of oily applications for the same purpose; the employment of ionization with the idea of attacking the infection in the mucosa; and perhaps the use of radium.

Experience has led me to believe that washing out should be avoided as far as possible in both the immediate and late post-operative stages. It seems to me to introduce a risk of spreading infection both to previously uninvolved regions of the nose and throat and to the ears without producing any favourable effect on the condition for which it is used. I am of the opinion that the secretion should be got rid of by hawking or blowing and that an attempt should be made to keep an oily film over the surface of the mucosa to prevent drying and crusting. I have had no encouraging results from the use of antiseptic packs with silver preparations, etc., but my experience with them is not extensive. The technical difficulties in employing ionization in the paranasal sinuses are considerable; I have had no personal experience of the method, but, in view of the favourable results which have been obtained by its use in cases of infection of the mucosa of the middle ear, a thorough trial would seem to be worth while. I have found that by using a relatively large dose of radium, only lightly screened, for a short time, an improvement is produced in cases of resistant ethmoidal infection with polypi. A vigorous reaction occurs, and at the end of two or three months the local condition has been much improved. I do not know if it has been employed for purely suppurative cases; if not, I should think a cautious trial would be justifiable.

Treatment from the constitutional side is more difficult. You have probably been struck by the great variation in the degree of general constitutional disturbance accompanying chronic sinus suppuration. While some patients are more or less invalids, with muddy complexions and constant headaches, others, although their noses are constantly producing pus, are rosy-cheeked and never have a headache. I have been impressed by the slight degree to which infection and new growth of the nasal sinuses involve the lymphatic system. As long as infection remains within the nose, any evidence of involvement of the lymphatic glands is very unusual, while a spread to the skin, nasopharynx, or pharynx at once produces a lymphatic infection, as shown by enlargement of the glands. I wonder whether this lack of absorption into the lymphatics may not be one reason why the body does not develop an adequate resistance to the infection. If so, one would expect good results with vaccines. Personally, I have found them of little, if any, use in chronic cases. Anything which improves the general condition of the patient may be expected to have a favourable influence on the sinus suppuration, although, as I have already said, constitutional and local improvement do not, by any means, always go together.

There is one factor which I believe to be of the utmost importance and one which is frequently neglected—namely, time. I have lived long enough to have seen cases which I regarded as incurable clear up with the passage of years, and I strongly advise that a very ample margin of time should be allowed to elapse after operation in these cases before judging of the result, and particularly before deciding on any further operative treatment. Many a patient has become a mental wreck through repeated operations which have not even improved the nasal condition. In my opinion, provided reasonable drainage exists from the nasal sinuses, headaches, if present, are due to a general neurasthenia rather than to the secretion of pus in the nose. Repeated operations do not relieve such cases, but merely make them worse.

REFERENCE.

1 *Journal of Laryngology, Rhinology and Otology*, 1927, p. 192.

AVERTIN.*

BY

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The production of general anaesthesia is almost invariably effected by the inhalation of volatile substances. This method has attained popularity for two reasons: first, on account of the wide therapeutic margin of the volatile drugs available, and secondly, on account of the facility of administration which permits the anaesthetist to control and regulate accurately the depth and duration of anaesthesia. Furthermore, absorption by this method is almost as rapid as by intravenous injection.

Non-volatile anaesthetics must be given either by the mouth, the rectum, or intravenously, the choice of method being governed by the properties of the individual anaesthetic. There are three groups: (1) liquids with too high a boiling point for administration by the lungs, paraldehyde being an example of this group; (2) alkaloids such as morphine and hyoscine; and (3) solid substances, often very insoluble in water, which act by virtue of lipoid solubility. This last group includes chloral and its derivatives chloretone, chloralose, and isopral; sulphonal and methylsulphonal; veronal with its derivatives sodium veronal, luminal, and pernocton; and urethane with its derivative hedonal.

All these drugs are excellent hypnotics, but as a general rule they are unsuitable as anaesthetics because the therapeutic margin is insufficient. A dose that will produce insensibility and render the patient free from pain does not necessarily produce a corresponding degree of immobility; in some instances the anaesthesia lasts so long that the use of the drug is impracticable. Unless a non-volatile anaesthetic can be administered by continuous intravenous infusion it must be given in a single dose, usually per rectum, and this has the disadvantage that when it has been absorbed it is impossible to control its action further. In addition, there is always the risk of local irritation upon the rectal mucosa. Such non-volatile drugs cannot be excreted rapidly, if at all, by the lungs; they are eliminated comparatively slowly by the urine, sweat, or faeces. For these reasons it is impossible to ensure a constant concentration of the anaesthetic in the blood and tissues, a condition easily attained when volatile anaesthetics are employed; with this group, therefore, it is impossible to maintain the patient at a constant level of anaesthesia without the risk of overdosage. The quantity to be administered must be calculated in proportion to the body weight of the patient; this method is the best at our disposal, and yet it is unscientific, because it takes no account of his age, temperament, or infirmity. Further, if we accept the view that anaesthetics act by virtue of lipoid solubility, the obesity of the patient must be taken into consideration when estimating the correct dose. There is no need for accurate dosage with a volatile anaesthetic, because there is a close correlation between the amount administered and the depth of anaesthesia. With such difficulties to overcome the introduction of a new non-volatile anaesthetic may appear unnecessary, but it must be remembered that even volatile anaesthetics do not give entire satisfaction. If the ideal anaesthetic is considered as one which is absolutely safe for the patient, produces complete insensibility and immobility, and is simple in administration the defects of the volatile type are at once apparent, and therefore the properties of any new anaesthetic should be critically examined.

Avertin, or tribromethylalcohol, is one of the latest non-volatile anaesthetics; it was first prepared by Willstatter and Duisberg[25] in 1926 by the reduction of bromal. It is an odourless white crystalline powder containing 85 per cent. of bromine, and soluble in water to the extent of 3 per cent. at 37° C.; but the powder dissolves very slowly, taking more than forty-five minutes, though aided by vigorous shaking to produce a clear solution. This was a serious disadvantage, but the drug is now issued already dissolved in amylene hydrate in the proportion of 1 gram

* A paper read in the Section of Anaesthesia at the Annual Meeting of the British Medical Association at Winnipeg, 1930.

of avertin in 1 c.cm. of the solvent. This solution is readily soluble in water; moreover, it presents the additional anaesthetic effect of amylene hydrate, which also stimulates the respiratory centre and tends to counteract the depressant action of avertin upon respiration. The drug is given in aqueous solution by the rectum; it is peculiarly suited to this form of administration because it is non-irritating to the mucosa, and it is absorbed therefrom within a very short time. Further, the therapeutic margin is greater when the drug is given in this manner.[12] Anaesthesia can also be produced by intravenous, subcutaneous, or oral administration, but although these methods have been used for animals they are not so convenient for man.

Solutions of avertin must be freshly prepared without the use of heat; heating above 40° C. and exposure to light and air cause decomposition of the drug into dibromacetaldehyde and hydrobromic acid. Both these substances are intensely irritant to the rectal mucosa, and many of the earlier difficulties in the use of avertin by rectal administration were due to their presence. If a solution of avertin is decomposed by heat and injected into a cat's rectum an acute haemorrhagic proctitis results in a very short time. It is therefore important to be quite sure that a stable solution is being used, and before administration it must be tested for its reaction by adding two drops of a 1 in 1,000 solution of Congo-red to 5 c.cm. of avertin solution. If the reaction is less than pH = 4.5 (due to the presence of hydrobromic acid) the indicator gives a purplish or blue colour and the solution must not be used, but if the orange-red colour of the Congo-red is unchanged the solution is satisfactory. A 3 per cent. solution of avertin is commonly employed, because the required quantity of the drug can then be given in the smallest possible volume; it is probably better, however, to administer a 2.5 per cent. solution, because in this concentration the drug is more evenly absorbed by the rectal mucosa.[21]

DOSAGE.

Correct dosage is a matter of considerable importance, for avertin is no exception to the general rule that when once an anaesthetic is given by the rectum it is impossible to control its action. No variation in the degree of narcosis can be effected by withdrawing any free avertin from the rectum, for the drug is absorbed completely by the time surgical anaesthesia is reached. When avertin was first introduced doses of 0.15 gram and over per kilogram of body weight were commonly used in the mistaken belief that full surgical anaesthesia could be obtained with safety. It has since been realized that this dose is unsafe for general use; 0.1 gram per kilo is safer and, for general purposes, more satisfactory because, although it produces complete anaesthesia in only 30 per cent. of cases,[5] the other 70 per cent. are in such a state of narcosis that a very little additional volatile anaesthetic serves to produce complete anaesthesia. This dose may now be taken as the standard for healthy patients, but for cachectic and exhausted patients, whose glycogen reserves are diminished and whose powers of detoxicating avertin are impaired, it is sufficient to administer 0.08 gram per kilo.

Although the smaller doses now given may be relied upon to produce deep narcosis they do not always produce full surgical anaesthesia. This may be achieved in one of two different ways: either by supplementing avertin by an inhalation anaesthetic, such as nitrous oxide or ether, or by utilizing Butzengeiger's method of giving small additional doses of the drug per rectum (for example, 0.025 gram per kilo) at fifteen-minute intervals.[5] This intermittent method is not generally used, probably on account of the trouble and time required and the grave danger of administering an overdose. Avertin should therefore be regarded as a particular form of premedication which will produce deep narcosis upon which full surgical anaesthesia can be superimposed by other methods.

It is generally agreed that 10 grams should be the maximum quantity of avertin administered to each individual irrespective of weight, though in certain cases the usual dose may safely be exceeded. The most important of these is exophthalmic goitre, where doses of 0.2 gram per kilo, and even more, can be given without ill effect; in tetanus it can be given in still larger doses, when it reduces the number and severity of the spasms without unduly depressing the respiration. A case of tetanus has been reported[17] in which a total of 63.8 grams was given during a period of twelve days to a child weighing 20 kilos; this represents an average daily dose of 0.28 gram per kilo.

Many drugs have been employed as adjuvants previous to the administration of avertin in the attempt to produce full surgical anaesthesia. Veronal and its derivatives, morphine, and hyoscine have all been used extensively in this connexion. If morphine is first injected smaller quantities of avertin than would otherwise be necessary are required, but it has the grave disadvantage of accentuating the depressant action of avertin upon the respiratory centre. It is therefore inadvisable to use morphine as a premedicament unless the dose is restricted to 1/8 grain.

THE ANAESTHESIA.

The induction of anaesthesia by means of avertin is most pleasant for the patient and easy for the anaesthetist. The pressure of the mask upon the face and the odour of the anaesthetic are abolished, while the administration of an appropriate quantity of the warmed solution is associated with no inconvenience to the patient. The solution, which has been prepared and tested by Congo-red, is slowly run by gravity through a rubber catheter into the rectum. No obvious change occurs in the patient for ten or fifteen minutes after the administration is completed; after this interval he begins to feel drowsy, and gradually lapses into unconsciousness. There is usually no preliminary excitement or struggling. The respiration becomes slow and shallow, and a slight degree of cyanosis may be noticed. Anaesthesia deepens, and the operation may commence about half an hour after the administration was started.

At this stage it is necessary to consider whether an additional anaesthetic is required or not. The usual signs of anaesthesia are unreliable, for, although the corneal reflex may be absent, a painful stimulus may elicit reflex movement and indicate that anaesthesia is not complete. According to Blomfield and Shipway[4] the best test is to apply a mask well wetted with ether to the face; if the breathing remains quiet the operation can begin, but if there is any holding of the breath full surgical anaesthesia has not been obtained, and it is necessary to continue with ether or some other anaesthetic. In any circumstances, a much smaller quantity of inhalation anaesthetic will be used than otherwise would be the case.

The blood pressure in man falls 10 to 20 mm. Hg, and a comparable fall occurs in both cats and rabbits; Bender states[1] that this is due to loss of vasomotor tone, but my own experiments[18] indicate that it is due to a central cardiac effect, and not to dilatation of the peripheral blood vessels. Avertin has a definite action upon the heart; it causes a slight increase, followed immediately by an appreciable diminution in the force of the beat, which is accompanied by a slowing of the rate. In the isolated rabbit's heart this effect is marked when it is perfused with a 1 in 2,500 solution. Continuous perfusion with a strength of 1 in 1,250 causes arrest of the heart in systole within five minutes, an effect which is produced by chloroform in a dilution of 1 in 20,000. It appears, therefore, that so far as its action upon the cardiac musculature is concerned, avertin is about sixteen times safer than chloroform.

Respiration is markedly affected; it is very shallow, and the rate may fall to 8 or 10 per minute. After the administration of a normal dose the centre still retains all its reflex effects and its response to drugs; in man the administration of ether by inhalation produces quickening of the respiration, while in animals inhalation of ammonia and the injection of hydrocyanic acid still produce quickening and deepening of respiration, while the stimulation of an afferent nerve, such as the vagus or sciatic, elicits the normal response. If, however, the limits of safe dosage have been exceeded the respiration, in animals, shows that type of breathing known as apneusis. The animal first takes a normal inspiration, which is followed, not by a normal expiration, but by five or six extremely

short expirations and inspirations; a normal expiration then occurs, and the process is repeated. Toxic doses of avertin cause death from respiratory failure, and it is important, therefore, to keep respiratory stimulants at hand when administering this drug.

The anaesthesia is very satisfactory for the surgeon, because muscular relaxation is complete, and it is comparable with that observed in chloroform anaesthesia. The pupil in both man and animals occupies the midway position, but with toxic doses it is contracted. A cat dies with pin-point pupils, and this affords a strong contrast with the dilated pupils which result from the administration of toxic doses of other anaesthetics. This is due to a central effect, for there is no action upon the pupil when an aqueous solution of avertin is instilled into the conjunctival sac.

With a dose of 0.1 gram per kilo anaesthesia is said to persist for about one and a half hours;[21] the patient subsequently passes into a deep sleep, from which he can be roused with difficulty, and which lasts for some hours. There are usually no undesirable after-effects, and vomiting or nausea seldom occurs. Avertin acts as an analgesic after operation; it is therefore of considerable value in diminishing post-operative pain and in abolishing the use of morphine for this purpose. Further, the patient has no recollection of being anaesthetized, because avertin causes amnesia.

The Fate of Avertin.

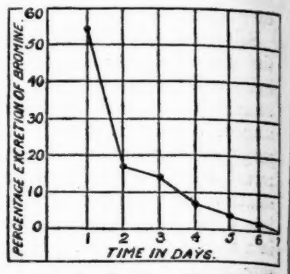
It has been shown by Straub[22] that avertin is absorbed by the rectal mucosa quicker than the water in which it is dissolved; accordingly, anaesthesia is produced with great rapidity. The subsequent course of events is uncertain, but it is stated[13] that the drug is detoxicated in the liver by combination with glycuronic acid. It has been observed[20] that the duration of narcosis is longer in fasting animals on account of the diminished glycogen reserves, and this explains why a smaller dose of avertin is efficient for cachectic patients. The converse, however, is not true, for the administration of glycuronic acid, glycogen, or cane sugar to a patient under avertin has no effect upon the duration of anaesthesia,[20] and consequently these substances are of no value for detoxication.

There is no doubt that avertin is excreted by the kidneys; a sufficient quantity of bromine can be recovered from the urine to account for 98 per cent. of the ingested avertin.[24 18] Traces of bromine, however, can be found in the sweat and breath.[23] The drug is not excreted unchanged, or as inorganic bromide, for neither of these substances can be demonstrated in the urine. The constant presence of glycuronic acid in the urine suggests that avertin is excreted as urobromalic acid—a compound formed by the union of tribromethylalcohol with glycuronic acid—but tests for this substance fail to prove its presence. The assumption, therefore, is that the drug is excreted as a complex organic compound of bromine.

At one time it was thought that avertin circulated in the blood stream as sodium bromide and was excreted as such.[7] The suggestion was therefore made that the rectal administration of a solution of sodium chloride to a subject anaesthetized with avertin would diminish the period of unconsciousness and lead to a more rapid recovery from anaesthesia. This depends upon the fact that bromides are excreted in the urine *pari passu* with chlorides, and if the rate of excretion of chloride is raised that of bromide will follow. It would be easy, therefore, if the drug circulated as inorganic bromide, to bring an anaesthetized patient to consciousness as required, a matter of considerable importance in view of the long period of narcosis following the injection. It is now certain that avertin does not circulate as sodium bromide, and hence the subsequent administration of sodium chloride has no effect upon either the duration of anaesthesia or the rate of excretion of bromine.[18]

The concurrent administration of certain inorganic salts with avertin, however, has an effect upon the anaesthesia; if potassium or magnesium salts are given with the drug less is required. Again, it has been shown[2] that the withdrawal of calcium and sodium salts from the body has a similar action.

It has been suggested that certain other drugs are useful in detoxicating avertin, and both thyroxine[19] and caffeine sodium benzoate[8] have been used for this purpose. Probably the former is the more encouraging, because patients suffering from exophthalmic goitre bear avertin anaesthesia extremely well, and can safely take far greater doses of the drug than can be tolerated by the normal individual. Carlton suggests that the bromine in avertin saturates the thyroxine.[6] Caffeine sodium benzoate, also, has been found to interrupt avertin anaesthesia in animals, and to stimulate respiration when this function is profoundly depressed, but personally I regard this suggestion with some misgiving, because it is now well known that the administration of caffeine in alcoholic and other forms of coma accentuates the toxic effect.



Graph showing the rate of excretion of bromine in a rabbit weighing 1.8 kilograms after the subcutaneous administration of 0.4 gram of avertin (=0.36 gram bromine).

Avertin is excreted at a comparatively slow rate; experiments show that between 50 and 70 per cent. is excreted in the first twenty-four hours following administration.[18] Bromine is found in the urine in progressively diminishing quantities until about the seventh day (see chart), and therefore, since the drug is cumulative, great care should be observed in administering a second dose. In spite of this, several instances[11 14 17] have been recorded in which large doses of avertin were given on successive days without ill effects to patients suffering from tetanus.

The Present Position of Avertin.

All rectal anaesthetics possess definite advantages over inhalation anaesthetics because, as already pointed out, the administration is more agreeable to the patient and simpler for the anaesthetist. Avertin is preferable to other rectal anaesthetics because it does not irritate the mucosa, and it is unnecessary to wash out the rectum before administration or after the operation. The preparation of solutions of avertin for injection is not difficult if the solution in amylene hydrate is used, but it requires some care. Preparation, testing, and administration should be carried out by the anaesthetist and not delegated to a nurse.

Induction is most pleasant for the patient because there is no excitement or struggling, and the only sensation appreciated is that of falling asleep. The anaesthesia is characterized by excellent muscular relaxation, which, for abdominal surgery, is accentuated by slow and shallow respiration. The usual undesirable post-anaesthetic effects seldom occur, but, on the other hand, the patient requires constant attention on account of the prolonged coma.

Serious drawbacks to the use of avertin as a routine anaesthetic are those concerned with detoxication and elimination. From a study of the literature Lundy[15] has calculated that the death rate intrinsic to avertin, after making all allowances for the submission of bad risks to operation, is about 1 in 3,333. Hewitt's figures,[9] published nearly forty years ago, for the intrinsic death rates of chloroform and ether are 1 in 3,162 and 1 in 16,302 respectively. Accordingly both avertin and chloroform anaesthesia have a similar risk to life which is much greater than that due to ether; it is evident that avertin is not an anaesthetic for general use when others at our disposal are much safer.

Unlike chloroform, avertin has little effect upon the heart; its danger depends upon the fact that it is so slowly destroyed and eliminated. It should therefore not be used when there is disease of the liver or kidneys, which hampers these processes. As avertin produces marked respiratory depression its use is inadvisable when there is extensive disease of the lungs; nor can it, of course, be given when local disease of the rectum or colon prevents satisfactory administration.

There are certain conditions, however, in which avertin has a definite advantage over other anaesthetics, and the

most important of these is exophthalmic goitre. In this disease anaesthesia can be produced with the least possible distress, and the excess of thyroxine present detoxicates the drug and minimizes the risk of toxic symptoms; the absence of any deleterious effect upon the heart is an additional advantage. Avertin is of value in operations about the nose and throat when the use of inhalation anaesthetics is inadmissible; in spite of prolonged coma and depression of respiration it is stated[3] that it can be used in these cases without anxiety. Further, it is useful in certain abdominal conditions because of the absence of post-operative sickness.

It is possible that some persons are unduly sensitive to avertin, for, even when allowances have been made for the unsatisfactory method of calculation, administration of the usual dose of 0.1 gram per kilo does not necessarily produce the same degree of narcosis in different subjects; for example, in some cases unconsciousness is not obtained, while in others death has occurred for no apparent reason.[10 16] This is a point which might well be investigated further.

My object in this paper is to indicate the relative advantages and disadvantages of solid as opposed to volatile anaesthetics. Avertin is perhaps the best of the solid anaesthetics which have been made available up to the present time, and, although it is not so satisfactory for routine use as the volatile inhalation anaesthetics commonly employed, it is of particular service in the conditions which I have mentioned.

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CONGENITAL RADIO-ULNAR SYNOSTOSIS.

BY

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CONGENITAL radio-ulnar synostosis, which consists in ankylosis of the upper end of the radius and ulna, is exceedingly rare. The condition is said to be due to a constitutional error—the result of the imperfect separation by the mesenchymatous tissue of the cartilaginous axials of the forearm, which take part in the formation of the bones.

The factor which controls the development of a synostosis is unknown, and various causes have been invoked to account for the condition. Certain records suggest an inherited condition with synostosis as a dominant Mendelian characteristic; a second possible factor is related to those which control the chondrification and ossification of the skeleton, many of the affected individuals being subject to exostoses. In our case, in spite of lengthy cross-examination of the patient and her relatives, we were unable to find a history of a tendency to loss of supination in any other member of the family, whereas the patient was of healthy appearance and of normal stature, without any disproportion in the size of the limbs, etc.; no exostoses were present.

The condition is described as having three types. (1) The radius is unaltered in shape, but the head is ossified to the region of lesser sigmoid fossa of ulna. (2) The upper part of the radius shaft shows no definitely moulded head (the headless type), and the upper end is moulded to the outer aspect of the ulna. (3) In the "dislocated head" type the head of the radius is well developed, but it is displaced backwards or forwards. This condition is usually unilateral, and associated with syndactilism, supernumerary thumb, or even absence of thumb. The case here reported belongs to the third type, and it also presents the unusual occurrence of being bilateral.

A girl, aged 18, was referred to me on July 23rd, 1929, at the out-patient department, and I reproduce the doctor's letter verbatim: "The bearer, M. S., suffering from fractured left olecranon. It was done seven weeks ago; a stellate type of fracture was found. The arm, after extension, was flexed to give her the 'carry to mouth,' and she was put on early massage. Massage has not yet completely straightened the arm."

On examination it was found that the left elbow could not be fully extended, whereas flexion was normal. The hand was held

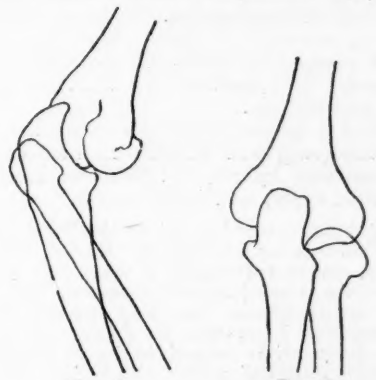

FIG. A. FIG. B.

in semi-pronation, but no supination was possible. Pronation could be carried out to about 90 degrees. The olecranon process appeared to be deviated towards the medial side of the elbow, whereas the head of the radius was directed towards the posterior aspect of the external condyle of the humerus, and was palpable as a distinct projection on the outer side of the elbow. No trace of the olecranon fracture of the elbow could be made out. On examination of the right elbow it was found that a similar condition was present, the arm being held in semi-pronation with limitation of extension. Flexion at the elbow-joint was normal, whereas pronation could be carried out to about 90 degrees.

The muscular development was normal, and there were no exostoses present. There was no disproportion between the upper

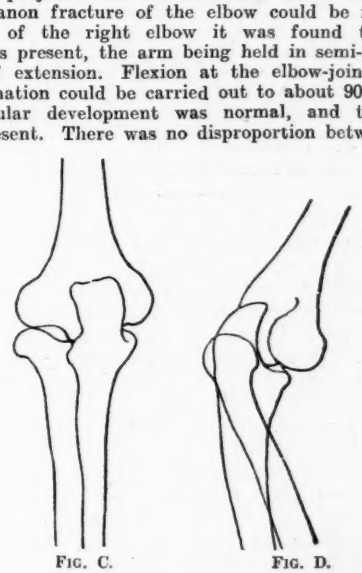

FIG. C. FIG. D.

arm and forearm. No history could be obtained of any familial difficulty or abnormality. The patient stated that she could not carry things "as other girls could," but she had not found any disability in doing her work. The blow on the elbow had caused much pain when incurred, and it was only after this that the mother thought that the patient could not extend the arm properly.

X-ray photographs were taken of the elbow-joint, radius, ulna, and humerus on both sides, and line drawings have been made. From these it is seen that the radius of the left side is more curved than normal (Fig. A). The head of the radius is somewhat expanded and displaced backwards with relation to the humerus, and does not articulate with the humerus. A clear definition cannot be seen between the radius and ulna, and ossification appears to be present between the radius and the ulnar region of the coronoid process. A similar condition is seen in Figs. D and C, which were taken of the right elbow region. Fig. A shows how it was possible in a bad radiogram to diagnose a fracture of the olecranon.

The case presents certain interesting features.

1. The rarity of the condition, especially of bilateral "dislocated head" type of synostosis. With a view to determining whether any cases are accidentally missed 500 radiograms taken at the Royal Infirmary of elbow-joints were examined; I was unable to discover a case of synostosis.

2. The importance of recognizing the condition in view of possible "compensation" for the loss of extension and supination, which the anxious parent may only discover for the first time after an accident.

3. In spite of the definite deformity, the little inconvenience entailed; in this case the blow in the region of the elbow was the first idea that the girl's parents had of anything unusual. The condition therefore does not require any surgical intervention.

4. As regards causation, this case does not fall in with the theory of generalized defect of the controlling factor of chondrification and ossification; there were no other defects, such as exostoses.

5. No hereditary influence could be ascertained.

Since the foregoing was written another case of synostosis has been seen by me, but this case belongs to the first of the three types, and is unilateral.

A child, aged 4 years, was brought to the Royal Infirmary on account of "stiffness after knocking the elbow." There was no sign of bruising, and on examination it was found that extension and flexion at the elbow-joint were normal. Supination was not possible, and pronation was only possible through an angle of 20 degrees. There was no evidence of any dislocation, and the bony points seemed to be in normal position. The extensor ossis metacarpi pollicis and extensor brevis pollicis were somewhat taut. The grip was unaffected, but the carrying of objects involved adduction of the elbow. An *x*-ray photograph was taken, a tracing of which is seen in Fig. E. There were no exostoses, and no family history of a similar condition.

The case was first seen in May, 1930, by Mr. Chisholm, F.R.C.S., and now (August, 1930), after massage and movement, the muscles referred to seem normal. The child is able to carry out normal movements with greater ease than when seen in May.

Here again we find certain important factors, which have been already discussed.

1. The condition is first noticed after an injury.

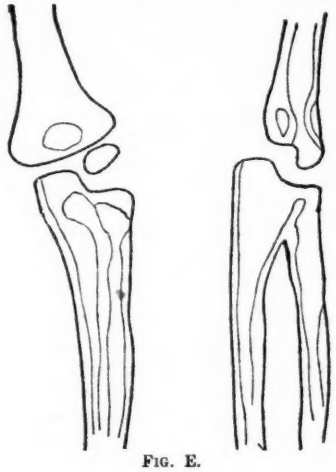

Fig. E.

2. Inconvenience is slight.

3. No hereditary influence could be ascertained.

4. The signs do not accord with the theory of generalized defect of the controlling factors of chondrification and ossification; there was an absence of exostosis, as in the first case.

I am indebted to Drs. Rayner and Harrison for the use of the *x*-ray films; and to Mr. Chisholm, resident surgical officer to the Infirmary, for sending me the second case.

AN OUTBREAK OF PUERPERAL FEVER IN A NURSING HOME.

BY

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The present interest in maternal mortality affords an excuse for the narration of the following observations and facts in connexion with an outbreak of sore throat, puerperal infection, and scarlet fever in a nursing home. The house was formerly a private residence standing in its own grounds; it is drained to a sewer, and is in every way hygienic. There are eleven rooms, seven of which accommodate patients. The staff consists of the proprietor-matron, who is a fully trained nurse with the C.M.B., and a fully trained nurse. When there are sufficient patients another fully trained nurse is employed for night duty. The matron has had considerable experience in maternity work in a former home conducted by her, where she had upwards of 300 cases without a death and without a febrile complication to cause anxiety. In the present home she had 83 cases without incident until the first trouble arose in January, 1930.

Case I.

A, a primipara aged 21, developed a sore throat and then a rash three days after a normal confinement. There was a slight perineal tear, which was sutured. Only one vaginal examination was made by the matron; the doctor in attendance made none. Puerperal fever was diagnosed, and the patient was removed to a nursing home in a neighbouring city, where she received treatment by scarlet fever antitoxin at the hands of a gynaecologist. After a long convalescence, in which albuminuria appeared, she recovered.

Following A there were 8 normal cases, in one of which slight sore throat developed, but the patient said she often had a sore throat of a similar character. This patient was in the home when B was admitted twenty-two days after A had been removed.

Case II.

B, a primipara aged 23, had a normal confinement, breech presentation, and had had one vaginal examination. There was a perineal tear, which was sutured. On the third day after the confinement she developed a sore throat, temperature 101° F., and had a generalized patchy rash. She was removed to hospital, where she died seven days after the confinement.

There had been no contact between B and the aforementioned patient with slight sore throat. The home was thoroughly disinfected and aired, and no new cases were admitted for a week. The matron was advised to use gauze face-masks when in attendance on patients, and she and her assistants carried out this instruction. Sixteen normal cases followed, and seventy-two days elapsed before C was admitted.

Case III.

C was a primipara aged 30. Labour was instrumental, and there was a perineal tear, which was sutured. Two days later this patient developed a temperature and a severe pain in the sacral region, which was attributed to rheumatism. This pain was so intense, especially on movement, that the perineal toilet could not be carried out satisfactorily. This pain was presumably secondary to a slowly developing streptococcal infection of the torn perineum. The patient was three weeks in the home, and was seen twice by a gynaecologist. She returned to her own home and then went to a private nursing home, where it was decided that she had had pelvic infection. Recovery took place, but convalescence was prolonged.

While this patient was in the home three others were admitted, and these had normal confinements and puerperia.

Case IV.

D, a primipara aged 23, was admitted on the day C left the home and had a normal confinement two days later. Two vaginal examinations were made by the matron. The doctor in attendance made none. There was no perineal tear. Three days later the patient developed a temperature and a severe sloughing vaginitis from streptococcal infection. She was removed to hospital, where she died ten days after the confinement.

Case V.

E, a primipara aged 30, had a normal confinement one day after D's confinement; a perineal tear was sutured. On the seventh day after the confinement she developed a temperature of

104° F. and a rapid pulse. She was removed to hospital, and recovered after prolonged convalescence.

The only patient now in the home was sent to her own home, and the place was closed to further admissions for a week and thoroughly disinfected and aired. The throats of the matron and assistant nurse were examined, but no evident signs of inflammation were present. A swab from the throat of the assistant nurse was taken, and the bacteriological report stated: "Streptococci present—non-haemolytic."

Three days after the removal of E the matron developed a sore throat, and three days later the well-marked rash of scarlet fever. She was removed to the isolation hospital, and the home was again disinfected and the restriction for admission of patients extended for another week.

Discussion.

How did the infection in these cases arise? None of the infected cases occurred in the same room; all were in different rooms, which did not communicate directly with each other. One doctor attended B and C, but there was an interval of seventy-two days between, and this doctor had attended several cases in the interval without incident. The other cases were all attended by different doctors. The matron and nurse had attended 18 primiparae and 8 multiparae between A and E, and all had normal puerperia. In view of these facts it would be difficult to assert that the antiseptic technique followed in the home was faulty, without discovering the fault in the cases that were infected, and this could not be done.

The possibilities of infection from milk were considered, especially when the matron contracted scarlet fever. There did not seem any possibility of her being infected from contact with an infected person. She had only been out in her private car for two short runs in the fortnight previous to the onset of the disease. The milk was supplied from a dairy in bottles, and was said to be pasteurized before delivery. In spite of this the possibility of a milk infection in cases of puerperal fever with sore throat was kept in mind, and the matron was advised to boil the milk supplied to future patients.

While autogenous infection might explain the illness of A and B, it would be wholly erroneous to assume such infection in C, D, and E, and in the matron, who was attacked by scarlet fever. All these cases occurred within a month, and were attacked one after another, so must have been related to some common source of infection. Did that infection enter the home by a visitor or was there a "carrier" among the other patients? It is impossible to say.

THE BLOOD CALCIUM IN DIABETIC RETINITIS.

BY

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In a recent publication Cammidge[1] reports that he has found a low calcium content of the blood in cases of diabetes with retinitis, and has suggested that this calcium deficiency might be the cause of the retinitis. He states that in 81 per cent. of his retinitis cases the blood calcium figures were low enough to be considered "distinctly pathological." It is a little difficult to gather what he considers abnormal figures, because few are mentioned in his publication. In the one case recorded in any detail 5 mg. per cent. is stated to be a "subnormal value," and 6.5 mg. per cent. "the maximum normal figure." Presumably these figures were obtained on whole blood, in which the normal content is usually said to range from 5 to 7 mg. per cent.[2] It is more usual to estimate the serum calcium, which varies from 9 to 11 mg. per cent., though some authors extend this normal variation from 8 to 12 mg. per cent.

* Working on diabetes for the Medical Research Council.

It seemed important to confirm this new observation on which a therapy might be based, and the point has been investigated in known cases of diabetic retinitis attending our diabetic clinic; no selection of cases was made, but the first ten patients who happened to attend were taken, and our results show that we have been unable to detect any abnormality in the serum calcium contents of these patients. The tests were performed in duplicate by the Kramer and Tisdall method.

Results.

The average serum calcium of these ten cases was 9.6 mg. per cent.; the lowest figure was 8.6, and the highest 11 mg. per cent. Seven cases fell between 9 and 10.5 mg. per cent., and in no case, therefore, was an abnormally low or high figure obtained. Admittedly the number of cases investigated is small, but the uniformly normal results make it clear that the blood calcium has no diagnostic or etiological importance in these cases.

A few other facts of etiological importance in retinitis should be mentoned. Five of the patients were males and five females. The average age was 61 years, the youngest being 44 and the oldest 71. Seven cases were severe enough to require insulin. The minimum ascertainable duration of the diabetes was two years, the maximum twenty years. Three patients showed traces of albuminuria without other evidence of Bright's disease; in them the retinal picture was that of diabetic retinitis alone. Gross arterio-sclerosis was not a noticeable feature. The mean systolic pressure was 150 mm. Hg, the diastolic 90 mm.; the highest systolic pressure was 185 mm., the lowest 100. It is clear, therefore, that true Bright's disease and hyperpietic arterio-sclerosis were not important etiological factors in these cases, which appear to be really "diabetic" in nature.

Summary.

We are unable to confirm the observation that retinitis in diabetics is accompanied by a low blood calcium content, which we have found, indeed, to be normal.

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MARKED HYPERGLYCAEMIA WITHOUT GLYCOSURIA.

BY

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Since some lay down the cast-iron rule that each person has a definite "renal threshold," the occurrence of a case presenting at one time marked hyperglycaemia without glycosuria deserves to be recorded, if not because it is unique, at any rate by reason of its rarity.

A married woman, aged 55, was admitted to the Colonial Hospital, Gibraltar, on March 26th, suffering from a bad septic hand; she was very sallow, unhealthy, and anaemic, and there was marked pyorrhoea alveolaris, with dental caries. The heart was apparently normal, the pulse rate varying from 84 to 90 per minute. Pyrexia was slight or absent, a surprising point in view of the extensive septic lesions in the left hand. The urine was found to be loaded with sugar, and the diacetic reaction was positive. The total quantity of urine was never excessive—at no time more than three pints—and the patient never suffered from undue thirst. For treatment, fomentations and eusol baths were given locally, an iron and arsenic tonic was administered for the anaemia, and a light diet, consisting of bread-and-butter, two Moorish eggs, pudding, beef tea, and one pint of milk, was ordered temporarily. The patient was so unhealthy, and her general condition so bad, that it was considered too risky to place her on any strict diet without further examination and consideration.

Besides the routine daily analysis of the urine in the wards, a specimen was sent to the laboratory on March 28th, when 26.3 grams of glucose per litre were recorded. There was no reaction to acetone or diacetic acid. On the following day the blood sugar and urine sugar estimations were repeated. The blood sugar had advanced to 0.366 gram per litre, while the urine contained slight amounts of acetone and diacetic acid.

On March 30th an injection of 10 units of insulin was given tentatively, and repeated the following morning one hour before

her dinner. The dose was increased on April 1st to 12 units daily, and a course of colloidal manganese (0.5 c.cm.) was commenced on the next day for her septic condition. During this time the index finger of the left hand was incised under local anaesthesia, and the hand and fingers improved markedly, but two further abscesses started forming above the annular ligaments. The urine was being checked daily in the ward, always with a heavy fall of sugar. On April 4th the insulin dose was further increased to 15 units, and, since her general condition was so frail, an ounce of brandy was started on April 6th. An examination on the next day showed that the blood sugar figure was higher —0.427 per cent.—but the urine sugar figure had fallen to 21.7 grams per litre; the acetone reaction was marked, but only a small amount of diacetic acid was present. In view of this report it was decided to give her two daily injections of insulin, each of 15 units. Her general condition was most unsatisfactory. She was quiet and inclined to be drowsy, and there was apyrexia and anorexia; she practically refused the original diet, and was really only taking milk, eggs, and beef tea. In the evening, as she was so drowsy, it was decided to administer further injections of insulin, 20 units at 9 p.m. and again at 1 a.m. On the morning of April 8th she was semi-comatose and extremely weak; the pulse was up to 100 per minute, and the urine was still loaded with glucose. Insulin in 30-unit doses was administered four-hourly throughout the day and night, and sodium bicarbonate was also ordered. The blood sugar improved on the following morning to 0.356 per cent., and the urine sugar to 4.8 grams per litre, while the urine contained no acetone or diacetic acid. Owing to the feebleness of the heart and pulse, alternate injections of digitaline and strychnine were given to sustain the circulation.

On the morning of April 9th insulin in doses of 30 units was administered at 10 a.m. and 2 p.m., and later repeated four-hourly throughout the night. The patient became mentally clear and less drowsy. The pulse remained rapid at 120 per minute, in spite of cardiac stimulants. On April 10th the blood sugar figure was highly satisfactory (0.184 per cent.); there were only traces of sugar in the urine, which was entirely free from acetone and diacetic acid. The insulin dosage was reduced to 20 units every four or six hours. Signs of threatening hypoglycaemia were noted following the insulin injections, and an orange was ordered to ward off these symptoms.

On April 11th the patient's general condition was very grave, owing to the debility and exhaustion. She was mentally clear and not drowsy; the pulse was still rapid (120 per minute), but it was stronger and more regular. The blood sugar figure was estimated twice; at 11 a.m. it was 0.48 per cent., but at 1 p.m. it rose to 0.633 per cent.; no more than a trace of urine sugar was present. There was nothing to account for this huge sudden increase in the blood sugar. Insulin injections (20 units four-hourly) were resumed, and on the following day the satisfactory blood sugar figure of 0.162 per cent. was recorded, and a trace of glucose only in the urine. The patient's general condition was unsatisfactory, however, and she was obviously dying from exhaustion and debility. On whatever spot of her body she rested a bruise appeared, with or without septic pressure sores, and eventually she died at 6.30 a.m. on April 13th. At no time was acetone noted in her breath.

The point of special interest in her case was the marked hyperglycaemia occurring on April 11th. As will have been noticed, the blood sugar content was twice estimated for fear of error; at the first time it was 0.48 per cent., while on the second occasion, at 1 p.m., it had risen to 0.633 per cent.; glucose was absent from the urine, or only present as a slight trace. Her "renal threshold," after studying the figures of her case, appeared to be somewhere near 0.18 per cent.

The problem arises, Why did such a marked hyperglycaemia develop twice on April 11th, with, at the most, only a trace of glucose in the urine? Why was there no corresponding increase of glucose in the urine? There was the possibility of error in the laboratory. I investigated this point, and discovered that the standard solutions for blood sugar estimations had been used, that they were not diluted, that no error of multiplication could arise, and, finally, that the same solution had been checked on a normal blood sugar case the same day. The ward tests for sugar in the urine confirmed the absence of it, thus excluding the possibility of human error in the laboratory.

The extraordinary condition of marked hyperglycaemia occurring temporarily without glycosuria was recorded in a patient who before and after April 11th reacted normally to insulin, and appeared to have a very definite "leaking point" at about 0.18 per cent. The question arises whether such a contradictory state is possible, and, if so, what could have been the cause, unless it was sepsis, with the corresponding toxins.

A NEW PASTE BANDAGE FOR THE TREATMENT OF VARICOSE ULCERATION AND PHLEBITIS.

BY

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(*With Special Plate.*)

It is a reluctant general admission among those who have interested themselves for a sufficient period in the healing of varicose ulceration that the ideal method of treatment in this treacherous and stubborn condition is prolonged rest in bed with elevation of the affected limb. This is the only completely satisfactory way of eliminating circulatory stagnation from a varicose superficial venous system, or of draining a massive oedema which results from profound venous thrombosis. The ulcer so treated gradually becomes analogous to a healthy wound on any other part of the body, and healing is then rapidly accomplished.

So seldom, however, is this Utopian arrangement possible that numerous ambulatory methods of treatment have been evolved, each contributing to the degree of its success by the efficacy of the same basic factor—that of applying a firm mechanical support which is designed to compress the varices and to prevent the accumulation of fluid in the tissues. These methods may be broadly classified under the following headings: (1) crêpe bandages; (2) woven elastic hosiery of all varieties; (3) rubber bandages; (4) strips of adhesive plaster applied in numerous ways; (5) cloth or chamois leather gaiters; (6) closely fitting plaster-of-Paris bandages (still adhered to by some heroic practitioners); and (7) Unna's paste dressings. It is not our intention to offer a general criticism of these various measures, or to discuss their individual efficiency, costliness, or difficulty of application.

Until three years ago we confined our experiments in the treatment of ulcers and phlebitis to the original zinc-gelatin paste of Unna, and to the numerous modifications of this formula which have since been introduced. The following tabulated group, in which the figures throughout represent parts by weight, will serve to indicate the diversity of opinion as to the ideal paste.

Varieties of Unna's Paste.	Zinc Oxide.	Glycerin.	Water.	Gelatin.	Starch.	Gum Arabic.
The original	10	15	40	20	—	—
Thomas	10	20	20	10	—	—
The soft (Gougerot) ...	10	17	30	10	—	—
The hard...	10	30	30	30	—	—
Saint-Louis	10	30	30	25	—	0.5
Héry	10	40	40	10	10	—
Leroy	10	25	45	12.5	—	—
Segard	10	20	40	40	—	—
Brandon	10	16	22	10	—	—
Gilson (Manchester) ...	10	12	22	6	—	—
Smith (Glasgow) ...	10	10	10	10	—	—
Clasen	10	40	30	20	—	—

We are satisfied that the good results following the use of zinc-gelatin dressings are due to the following factors:

1. The medicaments are useful. Glycerin is dehydrating and hence antiphlogistic; it has a definite place in the reduction of oedema. Zinc oxide, again, is both antiseptic and astringent.

2. When applied on light dressing material the paste does not prohibit the evaporation of skin secretions, and it allows air-access to the tissues. These advantages are not obtainable with rubber or elastic webbing bandages.

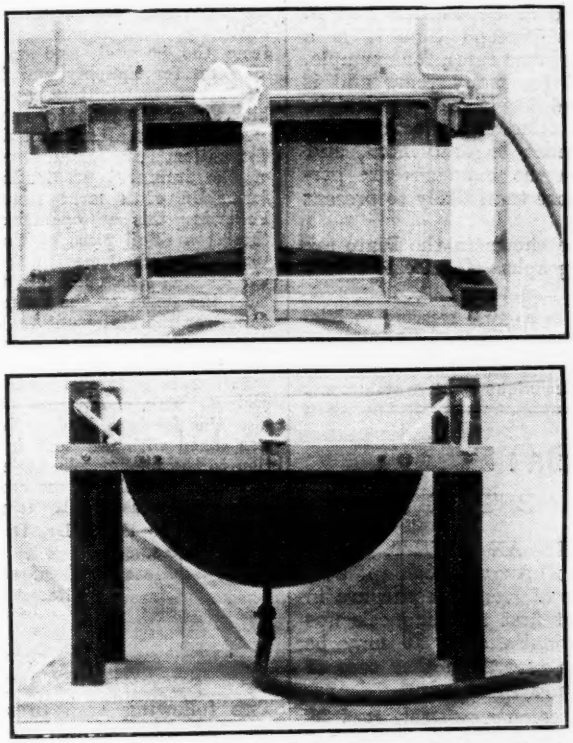
3. When properly applied the zinc-gelatin bandage forms a satisfactory mechanical support.

4. It is an inexpensive method of treatment, and, in the case of ulcers which are discharging profusely, the dressing can be much more readily discarded than the costly elastic webbing or crêpe bandage.

In spite of these four valuable features, the use of Unna's paste leaves one cognizant of the definite disadvantages which it possesses as regards speed and tidiness of application. Paste made up according to any of the formulae quoted is, when cold, a solid slab of jelly. It has to be melted before use, and must then be applied with a brush to the skin and subsequent layers of dressing. Thus, when there are large numbers of cases to be treated, a great expenditure of time is required, and, however expert one becomes, the melted paste almost inevitably splashes the patient's garments and everything in the vicinity.

After experimenting for nearly two years, we eventually compounded a formula which, while retaining the useful medicaments of Unna's paste, is capable of considerably simplifying the technique of applying supporting bandages. This paste contains the following substances in parts by weight: zinc oxide, 10; glycerin, 10; sterilized refined glue, 4; gum acacia, 5; and water, 30. When cold this is a viscous medium which becomes much more fluid on warming.

A sufficient quantity is placed in the double-jacketed basin attached to the apparatus and warmed by hot water, which occupies the space between the jackets. A bandage of requisite length and width is now wound on one roller of the machine and carried through the basin, under a series of crossbars, to a second roller, where it is rewound after being thoroughly soaked in the warm paste. (See illustrations.) In this way a bandage which is impregnated with zinc oxide and possesses highly adhesive properties is produced. The bandages are wrapped in grease-proof paper, and are stored ready for use in airtight tins. They never solidify in the same way as would the ordinary zinc-gelatin, but remain soft, very sticky, and quite pliable, even when kept for months. No preparation is required before they are applied in the same fashion as ordinary cotton bandages.



Special bandage machine used for the manufacture of paste bandages for the treatment of varicose ulcers. Note external water jacket, which renders the paste sufficiently fluid for ready use.

Bandages of the type supplied to the requirements of the national health insurance authorities will be found unsatisfactory for this purpose. They are so closely woven that their suppleness is sacrificed in the cause of strength; moreover, it is most difficult to impregnate them completely with the paste. In preparing some two hundred bandages weekly to meet the requirements of the Swansea Hospital clinic, we use only the cheap three- and four-inch "hospital" bandages, which have not more than twenty-two strands of thread to the inch of bandage length, and thirty-five strands to the inch of width.

Method of Using the Prepared Bandages.

The first measure in commencing the treatment of an ulcer which is discharging offensively is immersion in a hot eusol bath for a period of fifteen minutes. The affected limb is now elevated, and in this position all encrustations are removed from the edges of the ulcer and from the surrounding skin surface. Much of the oedema can simultaneously be reduced by gentle stroking massage in the direction of the trunk. Irrigation of the raw surface is carried out with a weak solution of hydrogen peroxide, followed by normal saline solution, and the ulcer is then dressed with layers of gauze cut exactly to the size of the excavation and soaked in eusol. The thickness of the gauze is just sufficient to reach the level of the surrounding skin, and is covered by a thin layer of wool, intended to absorb some of the copious discharge which always appears during the early stages of treatment.

With the foot at right angles to the leg a strip of four-inch paste bandage is now placed with its centre over the point of the heel and its ends almost meeting in front of the ankle-joint. A second and a third strip are similarly applied, partly overlapping the first, thus completing what might be termed a separate "heel-cap." A strip of bandage is now placed with its centre under the arch of the foot and its extremities at the level of the head of the fibula on the outer side, and at a corresponding point on the inner side. This is the "stirrup," which greatly strengthens the entire bandage. In cases where oedema is particularly massive longitudinal strips are also placed in front of and behind the leg, in order to prevent the bandage from cutting into the leg between the turns. Commencing at a spot just proximal to the toes the paste bandage is now completed by carrying a "figure of eight" up to the level of the head of the fibula. The best results are obtained when these bandages are applied as tightly as the patient can reasonably endure them. To prevent the sticky dressing from adhering to the stockings a roll of tissue paper or, failing this, an ordinary dry bandage, is now applied; it may be removed by the patient as soon as the paste has dried.

Within a few hours of application the warmth of the limb dries the moisture from the bandage, the twists of which then become closely adherent to one another and moulded to the leg, thus producing a firm though elastic support, which will remain efficient for three weeks to a month if desired. The whole procedure must be carried out twice weekly at first, but longer periods are very soon allowable between the dressings, and in most instances only a short time has elapsed before weekly treatment is sufficient. Even in the acute stages the secret of success is to change the applied medicament as soon as its healing effect fails to be sustained. Ulcers, for example, which do not improve with eusol dressings, will often react very rapidly to a 0.1 per cent. solution of acriflavine, or to an emulsion of this drug in paraffin. Although ointments are not generally recommended, "varul," an irradiated ergosterol ointment with added zinc oxide, frequently induces rapid healing in clean, chronic ulcers.

The paste bandage interferes in no way with the injection treatment of veins; in fact, it provides relief in those cases where a smart reaction, accompanied by swelling and tenderness, follows the injection of the various sclerosing media. The only difference we make in these instances is to cover the injection sites with a thick pad of wool to prevent painful pressure.

In phlebitis the treatment is particularly successful, both in reducing oedema and in dispelling the tense inflammatory condition. The entire hot and dusky area is well covered with pure ichthyol, dressed with a thin layer of gauze and wool, and finally paste-bandaged in the ordinary way. These cases need only be dressed once a week. In the dry and irritating forms of varicose eczema we have found that the best results follow when the bandage is applied over strips of lint spread with an ointment containing 2 parts of crude coal tar, 4 parts of zinc oxide, and 16 parts of vaseline.

Comment.

The paste bandage has now been in use for a period of three years, during which time it has successfully healed some hundreds of ulcers of a chronicity ranging from three months to fifteen years. One of us has had the opportunity of gauging its efficiency in a large hospital clinic and in consulting practice; the other has tested it thoroughly in a charitable dispensary where assistance is distinctly restricted, and where patients during treatment are bound by circumstances to carry on their full daily work in a variety of laborious occupations.

From the patient's point of view the paste bandage appears to be a very satisfactory application; the remark which most of them make after the initial dressing is that they have had their first night of sound sleep for some months, or that they already feel fit to recommence their employment. While we have found that the paste bandage constitutes a definite improvement upon the methods so far available, both in convenience of application and in the results obtained, we do not pretend that it is a panacea for all varicose ulcers. In some cases, for example, where the ulceration has existed for many years and is accompanied by massive oedema and deeply seated phlebitis, the ultimate prognosis remains somewhat gloomy. The primary cause of the trouble cannot be eradicated, and even when healing occurs, unless the bandages are permanently worn, recurrences are more than likely to present themselves.

The self-explanatory illustrations shown in the Plate are chosen from a series of photographs of ulcers before and after treatment.

The thanks of the authors are due in a great measure to Miss R. E. Jones, chief pharmacist to the Swansea General Hospital, for her assistance in compounding the formula for the paste bandage, and to Sister Golden of the Shooters Hill Hospital, London, for her invaluable help in elaborating the technique of ulcer treatment.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HENOCH'S PURPURA IN AN ADULT.

In the *British Medical Journal* of August 16th (p. 249) Mr. F. W. Widgery reports a case of Henoch's purpura in a man aged 23, and states that at first the diagnosis was doubtful on account of the patient's age. It may be interesting, therefore, to place on record another case of what I believe was Henoch's purpura in an adult.

On September 17th, 1929, I saw a grocer's assistant, aged 36, who complained of headache, aching pains in his limbs, and general malaise. He had a slight cough; his temperature was 99° F, and his pulse 80. There were no other physical signs. Next day he had pain round the umbilicus; there was some tenderness in that region and in the right iliac fossa. The stools were normal. On September 20th there appeared a profuse petechial rash scattered over the trunk and limbs; it was purple in colour, the spots ranging in size from that of a pin's head to a split pea. The abdominal pain was severe and the tenderness greater. On September 21st the stools were frequent, loose, and black, but there was no vomiting; the abdomen was swollen and tympanitic. On the next day the stools were still dark, but becoming lighter; there were many more purpuric spots. During all this period the temperature ranged from 99° to 100.5° F.

On September 22nd the stools were normal in colour, soft, but becoming formed; the diarrhoea had ceased. There was still a good deal of abdominal pain and tenderness, though it was less severe. On September 26th the pain had subsided and the rash was fading; there were no more fresh spots. On October 9th the patient had improved generally, but was still very weak and looked anaemic. The temperature was 99°, and the pulse 80. He was slightly constipated, the abdomen was distended, and he still complained of slight pain and tenderness in the umbilical and right iliac regions. The spleen was not palpable. The apex beat was in the fifth interspace, the cardiac dullness had not increased, and there were no adventitious sounds. The urine contained a slight haze of albumin. An examination for *B. typhosus* was negative.

On October 11th a blood examination resulted as follows: Red blood cells 4,900,000 per c.mm.; white cells 14,000 per c.mm.; haemoglobin 100 per cent. A differential count showed polymorphonuclears 88 per cent., large mononuclears 4 per cent., and lymphocytes 8 per cent. On October 24th the faeces were reported negative for *B. typhosus*. Three days later he complained of pain in his right leg and thigh, and there was some oedema. The urine was negative to *B. typhosus*. On October 29th the white corpuscles numbered 20,000 per c.mm., the polymorphs 84 per cent., large mononuclears 12 per cent., and the lymphocytes 4 per cent.

From then onwards convalescence proceeded steadily but very slowly. The oedema of the right leg persisted, and on August 5th, 1930, when he resumed work, was still in evidence in the evening of each day.

Alfreton. H. W. Pooler, M.B.

FRACTURE OF THE FRONTAL BONE INVOLVING THE FRONTAL SINUS, WITH FORMATION OF AN INTRACRANIAL PNEUMOCELE.

(*With Special Plate.*)

The following account of a case, accompanied by radiographs, may be of some interest.

The patient, a man between the ages of 20 and 30, met with a motor-cycle accident on April 25th, 1929; he was removed to a local hospital, and remained unconscious for four or five days. On recovering consciousness he suffered considerably and intermittently from headaches. In June, 1929, he was discharged from the hospital, and on July 26th he was admitted to the Hospital for Epilepsy and Paralysis, Maida Vale, suffering from headaches, intermittent weakness of left arm and left leg, and blurring of the vision of the right eye.

A few days after admission *x*-ray photographs were taken of the patient's skull, and a comminuted fracture of the right half of the frontal bone, leading into the frontal sinus, with the formation of a large intracranial pneumocele, was discovered. Following this an operation was performed under local anaesthesia; a small piece of the right half of the frontal bone was removed, a small tear in the dura mater found and sutured, and the channel which led into the frontal sinus plugged with wax.

At the finish of the operation, almost at once did the patient volunteer the statement that the headaches were better. He was again *x*-rayed about four days later, and it will be noticed that the intracranial pneumocele has disappeared.

Fig. 1 is a lateral view taken with the head lying on the occiput. This shows how the pneumocele has risen to the top, also the fracture leading into the frontal sinus. A radiograph was taken with the head in the reverse position, but the alteration to the pneumocele was not very marked, owing to absence of any large quantity of cerebro-spinal fluid. Fig. 2 was taken in the same position as Fig. 1. It shows the appearances after operation.

I desire to thank Dr. D. McAlpine for permission to use the clinical notes.

H. Martin Grey, M.R.C.S., L.R.C.P.,
Radiologist, Hertford County Hospital; late Radiologist, Maida Vale Hospital for Epilepsy and Paralysis.

SECONDARY ABDOMINAL PREGNANCY.

The following case presented interesting points in diagnosis and treatment.

A married woman, aged 32, with three children, the youngest of whom is 5 years old, had been under prolonged treatment for pelvic inflammatory trouble, which originated with a vaginal discharge and painful micturition. Her condition had gradually become worse, and pain in the right iliac fossa caused her to seek admission to hospital.

On examination the signs and symptoms suggested pelvic cellulitis. Vaginal examination revealed a tender mass occupying the pouch of Douglas; micturition and defaecation were painful. On palpation the lower right rectus muscle was guarded, and deep pressure caused much pain. Abscess formation was suspected. General and local treatment was instituted, and two days later a brownish mucous discharge appeared from the vagina. On close questioning it was found that this had also occurred on one or two previous occasions; otherwise the menstrual history was uninterrupted. The pain continued, and shreds of decidual membrane were passed; the probability of ectopic gestation was considered, and a laparotomy was decided on.

The abdomen was opened in the middle line, and a secondary gestation sac was found, which consisted of a mass of adhesions of the parietal peritoneum, omentum, and intestine. On separation of these a foetus of about four months' gestation was found and delivered. The cord was traced downwards, and the placenta separated from its attachments in the pelvis. The haemorrhage was profuse, but soon ceased on pressure with hot towels. The large sac was drained, and for several days clots and fragments of membrane were discharged from the tube, and, later, purulent matter escaped from the wound; the convalescence was otherwise satisfactory and uneventful.

I wish to thank Dr. Livingston for his co-operation in the management of this case.

Herbert F. Blacklee, M.B., F.R.F.P.S.,
Honorary Assistant Surgeon, North Lonsdale Hospital, Barrow-in-Furness.

Reviews.

RADIOLOGY OF THE CHEST.

In *The Chest*,[1] the latest addition to the *Annals of Roentgenology*, Dr. L. R. Sante has produced an interesting, instructive, and comprehensive yet compact volume, containing information of the utmost value to the physician who needs in the course of his work a knowledge of the interpretation of chest films. The work is well arranged, being divided into three parts. The first deals with the methods used in making *x*-ray examinations of the chest, the anatomy and physiology of the chest from a radiologist's point of view, and the principles which lie behind the correct interpretation of the findings. In this part the section on the mechanics of respiration is noteworthy for its simplicity. The second part deals with the radiological evidences of disease; and the third with the various diseases of the respiratory organs, their radiological characteristics and differential diagnosis. The text is illustrated by nearly 400 excellent radiograms and by many line drawings, which clearly show the author's meaning. The clinical material in the third part is particularly good, each description having the clarity and conciseness of a thumbnail sketch. The special radiological study of the heart is excluded from this volume. Special interest attaches to the section on the pneumonias, for the radiological examination of patients suffering from pneumonia is not regularly practised in this country, though the author has undoubtedly made out a clear case for its value. He has made the study of radiology in these diseases peculiarly his own, and in consequence much of the information he gives is new. His views on pulmonary syphilis will not meet with general acceptance, for he holds that the lungs are relatively, if not entirely, immune to syphilis. He states that he has not observed an authentic case or met with any proved cases recorded in the literature. Of outstanding interest is his section on pneumonoconiosis, a disease of very great industrial importance. Radiological examination of the lungs affords the only way by which the full extent of the disease can be determined, and this method of examination is more reliable than any other in detecting progress or regression of the condition. The differential diagnosis of pneumonoconiosis is particularly well described and illustrated. Most of the other pulmonary disorders the author deals with clearly and concisely, but he appears to make no reference either to hydatid or to dermoid cysts, both of which should surely find a place in such a volume. By a curious convention practically all the radiograms and diagrams are so arranged that the heart is seen on the right side of the chest, and the lateral views—for example, in Figs. 199 and 200—give an image which is the reverse of that normally seen, points which should be borne in mind by those who are not thoroughly familiar with the interpretation of radiograms. The work may be regarded as an important contribution to the literature both of radiology and of diseases of the respiratory system, and Dr. Sante is to be congratulated on producing a volume which embodies so much personal observation and contains such sound views. His work deserves a place in every medical library; but its price is 20 dollars.

De Abreu's book on radiological studies of the lungs and mediastinum[2] is a volume of original views, the result of the author's researches in an important branch of radiology. It is divided into four sections, each representing an address given by him during the last few years. In the first section the author details the methods by which he is able to calculate the relative volumes of healthy and diseased lung, a point which he claims to be of importance in assessing the prognosis. These methods are applied, in the second section, to a study of the discrete forms of pulmonary tuberculosis. The third and fourth describe in great technical detail the "radiogeometry" of the mediastinum, with special reference to the heart and great vessels of the chest. The author contends that there is a normal measurement for the different vascular shadows, and that it is possible to determine comparatively early arterial disease by careful study of their widths and densities. When the technical difficulties in obtaining a standard radiogram of the chest are considered the question arises whether this degree of precision is feasible; on the other hand, such precise methods have often led to the discovery of important facts. The volume is illustrated by many excellent radiograms and clear line drawings; it is well printed and has a good bibliography. Its interest lies in the originality of its views and in the meticulous care with which the author has studied his subject.

[1] *Annals of Roentgenology.* Vol. xi: *The Chest.* By L. R. Sante, M.D., F.A.C.P. New York: P. B. Hoeber, Inc. 1930. (8 × 10¾, pp. xxvi + 561; illustrated. 20 dollars net.)

[2] *Radiologiques sur le Poumon et le Médiastin.* Par M. de Abreu. Paris: Masson et Cie. 1930. (6½ × 10, pp. 200; 42 plates, 79 figures. 50 fr.)

CLINICAL ASPECTS OF THE BACTERIOPHAGE.

However well supported by evidence, a case that is overstated meets with a somewhat prejudiced reception from those who might otherwise be favourably inclined. Broadly speaking, the phenomenon of the bacteriophage is open to two interpretations: either the bacteriophage is a living infra-microscopic parasite of bacteria, or it is a non-living agent with properties approaching those of enzymes.

D'Herelle, as is well known, is convinced of the correctness of the former hypothesis, and in a small volume entitled *The Bacteriophage and its Clinical Applications*[3] he has resumed the arguments in favour of this concept. It must be admitted that there is a great deal to be said for his point of view. Life, as he points out, is characterized by certain features: ability to multiply, to adapt to altered environment, and to assimilate without loss of identity; and since the bacteriophage can be shown to possess these characters he argues that it must be living. No doubt it is very galling to d'Herelle, who holds this view so strongly, to find that all are not prepared to accept his interpretation of the phenomenon, but he would do well to remember that his opponents are neither fools nor knaves, and certainly nothing would be lost by treating other people's views with a little more consideration. The chapter on bacterial mutation, in which the author sketches the part played by the bacteriophage in this direction, is interesting and worthy of careful consideration. The views expressed on recovery from and immunity to infectious disease are original and therefore stimulating, though many bacteriologists will disagree profoundly with them. Here, too, overstatements and rash generalizations are to be found which can only detract from the arguments put forward. It is foolish to say that bacteriologists, rather than study the natural disease, persist in inoculating laboratory animals with viruses to which they are "completely resistant," and then observing the result! And to state that in all epidemic bacterial diseases the natural disease is contagious, and the experimental disease is not, is simply to ignore facts.

D'Herelle has little use for the orthodox views on immunity. To his way of thinking the bacteriophage is the important factor governing recovery from an infection, though he does allow that the dissolution of the bacteria by the phage liberates antigen, the absorption of which gives rise to immunity. Presumably the phenomenon of inflammation is merely a trick played by nature to deceive the unwary student of disease. The chapter on the use of the bacteriophage is of considerable interest, and it must be admitted that the results obtained in the treatment of dysentery and cholera are quite striking. In other diseases, such as colitis, sprue, infantile diarrhoea, and coryza, the evidence is much less convincing, and the author frankly admits that typhoid fever does not respond to bacteriophage therapy. We cannot help recalling that equally glowing accounts have been given of the therapeutic use of bacterial filtrates; no doubt Besredka would place much of the success obtained with the bacteriophage to the credit of antivirus. However, those who wish to acquaint themselves with d'Herelle's work will find this book of service. It is clearly written and presents a point of view which is refreshingly unorthodox.

[3] *The Bacteriophage and its Clinical Applications.* By F. d'Herelle. Translated by George H. Smith. London: Baillière, Tindall and Cox. 1930. (5½ × 8, pp. viii + 254. 18s. net.)

DESCRIPTIVE ANATOMY.

It would be of interest to enumerate all the textbooks of systematic human anatomy that have been written for the benefit of medical students, and to determine why it is that some achieve a world-wide popularity while others retire into obscurity almost as soon as they are published. Probably fashion and tradition have their say in the matter to a considerable degree. We have our Quain, Cunningham, and Gray in this country, and it is rare to see foreign textbooks in use by our students, except those which depend for their distinction upon the excellence of their illustrations. This is a point deserving of attention. The fourth volume of Professor Julius Tandler's Textbook of Systematic Anatomy,[4] which deals with the nervous system, sense organs, and endocrine glands, is remarkable for its sumptuous illustrations, a large proportion of which are reproduced in several colours. It is obvious that no effort has been spared to illustrate this textbook in the finest and most attractive style, and the author is to be congratulated on having at his disposal such a superb artist as Hajek.

An anatomical textbook of this kind advertises itself by the quality of its illustrations. But unhappily this does not seem to be sufficiently realized in England either by authors or publishers, for it would be possible to name at least half a dozen anatomical textbooks which have recently appeared in this country in which the excellence of the text has been more than counterbalanced by the poverty of the illustrations. If this is not quickly realized, then translations of the richly illustrated Continental textbooks will be serious competitors with our own publications. Certainly this is quite likely to be the case if Tandler's book is translated into English. We should be sorry if it were to turn out so, for we do not think the text of this book reaches the high level of our own classics. This is not to say that the text is not perfectly adequate for the needs of the average medical student, for the description is detailed and clear. Especially noteworthy is the section entitled "Die nervösen Leitungssysteme," in which a connected account is given of the various conduction paths which subserve the functional activities of the nervous system. But we miss the "refinements" which might make the book less of a catalogue of data to which little perspective is given. In other words, the descriptive part is of the orthodox, cut-and-dried anatomy. Debatable points are set down as established facts, and practically no references to literature are given. Little attention is paid to important variations of normal structure and arrangement which have a very direct application to clinical problems. It is for such points as these that the student is most likely to turn to his textbook of anatomy when he reaches the stage of clinical study.

But these criticisms are not inconsistent with our opinion that this volume of Tandler's *Anatomy* is a very fine production, and that it ranks with those classics of descriptive anatomy which should form an essential part of the library of every medical student and practitioner.

MEDICAL TREATMENT IN GENERAL PRACTICE.

Compared with the time set apart for the teaching of diagnosis that devoted to inculcating the principles and details of treatment is in most medical schools regrettably small. With the object of redressing the balance Professor Harry Beckman has produced a portly volume with the title *Treatment in General Practice*.[5] In it each of the chief diseases of man, exclusive of those that by prescriptive right belong to the legitimate specialties, has had its own peculiar therapy described, as that therapy has been evolved out of the experience of physicians all over the world. In every section authorities are quoted freely, and when opposing views are held each side is given sufficient of an innings to make its main contention clear. The author looks upon himself as an editor, summing up the main points in a judicial manner and indicating clearly where the claims made by particular workers in any given field have failed when submitted to the test by other observers. This method is highly successful, as not only does it offer guidance, but it stimulates thought where a bare recital of formulae or nursing details merely stifles initiative.

Dr. Beckman has supported his text with an excellent bibliography. In those diseases such as arterio-sclerosis and the chronic forms of nephritis, in which the treatment is almost purely that of symptoms, he does not hesitate to point out that the better course is to secure as far as possible the comfort of the patient rather than to make his life a burden by insisting on measures which are irksome and of very doubtful practical value. The general plan of the book follows the lines of the ordinary textbooks, in that diseases are classified according to the systems affected—nervous, circulatory, and so on. There are also chapters on acute poisoning, burns, and the treatment of certain obstetrical conditions. The final chapter embraces a miscellany, such as the treatment of sea-sickness and delirium tremens, methods of sterilizing the skin, and the technique for the administration of glucose. No mention is made anywhere of the treatment of the definitely surgical conditions such as appendicitis. For this reason a more accurate title would have been "Medical Treatment in General Practice." One or two rather blatant misprints have escaped the eye of the proof-reader, but otherwise the book, both in style and in get-up, deserves nothing but praise, and Dr. Beckman has refrained from employing those transatlantic forms of expression which so often jar upon the island-born reader, if they do not completely mystify him.

THE CASE FOR CREMATION.

In a small book entitled *Cremation*[6] Miss Florence Fidler recalls the primitive methods of surrendering the dead to earth, air, and fire; she asserts that Christianity did not definitely quarrel with the idea of incinerating the dead until the notion of a material resurrection became a dogma, when cremation gradually ceased to be practised in Europe. In 1873 Sir Henry Thompson studied the question in Italy, and, realizing the value of cremation as a sanitary reform, urged its immediate adoption in this country. Opposition was strong at first, but his vigorous campaign resulted in the formation of a society of sixteen members, including Millais, Tenniel, and Trollope, and this body was the nucleus of the Cremation Society. An acre of freehold ground, acquired near Woking in 1878, was devoted to public cremation only after the propaganda work of some enthusiasts had extorted a legal judgement in their favour. Express parliamentary sanction was obtained in 1902. Miss Fidler surveys the rapid subsequent growth of cremation, especially since the end of the war, noting the peculiar conditions that have affected its history in Germany and France. She then gives a succinct account of the process by which the body is reduced to a fine dust, and indicates the various destinies that await the ashes, whether scattered in the garden of rest, inurned in a columbarium, or carried away to distant chosen places.

Some attention is naturally devoted to the stock argument that cremation may hinder the detection of crime. This objection is adequately dealt with, and others are carefully considered in a separate chapter. The author finds that cremation is of moderate cost to the individual, and may even be a source of financial relief to the community. In discussing the ethics of the subject she points out that the early advocacy of cremation coincided with the exposition of Darwinism, and of a science that seemed in complete conflict with religion. Although the crudity of both scientific and religious materialism has lessened since that time, there still remains the psychological paradox by which a genuine reverence can commit the dead body to the slow process of disintegration, ignoring the considerations that the rights of the dead include safety from violation and from the disturbance that finally overtakes most cemeteries. Fire is described as no more "pagan" than earthly burial, merely cleansing and accelerating the processes of nature.

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[4] *Lehrbuch der Systematischen Anatomie.* Von Professor Dr. Julius Tandler. 4 Band: Nervensystem und Sinnesorgane. Leipzig: F. C. W. Vogel. 1929. (7½ × 10½, pp. xiii + 649; 406 figures. M.65.)

[5] *Treatment in General Practice.* By Harry Beckman, M.D. Philadelphia and London: W. B. Saunders Company. 1930. (Roy. 8vo, pp. 899. 45s. net.)

[6] *Cremation.* By Florence G. Fidler. London: Williams and Norgate, Ltd. 1930. (Cr. 8vo, pp. 80. Paper cover, 1s. net; bound, 2s. 6d. net.)

NOTES ON BOOKS.

We have received the second edition of *Psychopathology: Its Development and its Place in Medicine*,[7] by Dr. Bernard Hart. In the present edition no material alteration has been made in the body of the book, but a new chapter on the conception of dissociation has been added, which serves to amplify the writer's point of view with regard to the respective contributions to psychopathology of Janet and of Freud. We reviewed the first edition of this book at some length (May 7th, 1927, p. 839), and the present issue does not therefore require extended comment. It is satisfactory to know that a new edition has been called for, as the monograph is one with which every serious student of psychopathology should make himself acquainted.

There are cynics who doubt whether the newly qualified practitioner of to-day is given to reading the books on conduct in practice which from time to time are written for his moral guidance. It should be otherwise with *General Practice*,[8] the latest production of the pen of that genial cynic Dr. Ernest Ward. Notwithstanding his statement that his book is not intended for those of mature experience, there is much in it that should enlighten and entertain the older practitioner no less than the younger. Dr. Ward describes with a pretty wit and many anecdotes how he has met or circumvented difficulties incidental to general practice. If he hazards an opinion on correct conduct he enforces it with a story. He thinks marriage an advantage to doctors; and then proceeds to emphasize the necessity for a good wife by describing the varying fortunes of doctors who chose (or were chosen by) tea-shop girls and café manageresses. He believes that general practitioners should undertake only minor operations, and illustrates the degeneration which often overtakes the practitioner-surgeon with the tragedy of an operator who expected to find an ovarian cyst, became flustered at the appearance merely of ascitic fluid, suggested the existence of a new growth, and, finally, removed for microscopical examination—a ring-like segment of a very fat pelvic colon! As an incentive to reputable practice, Dr. Ward offers a classification of undesirable types into the collector practitioner who, in visiting a house, discovers that little James is looking rather pale, or that Mary is stooping as if her back was not quite straight; the brigand, who treats many grateful patients for nothing in the hope of discovering a well-to-do victim to fleece; and the stunt practitioner, who administers prolonged and expensive courses of polyglandular therapy to all and sundry. Dr. Ward cheerfully admits that at some time or other he has made most of the mistakes which a medical man may make. He has found that consultants are often opinionated and conceited because they are continually speaking *ex cathedra* and do not usually hear of their mistakes. At the same time he impresses on his readers that, with few exceptions, colleagues are to be considered just as honourable and wise as ourselves and to be treated exactly as we should like them to treat us. Whether there are doctors, young or old, who require the advice that "it looks bad, or at least unbusinesslike, to enter a bedroom with a cigarette in the mouth," we do not know, but we hope they are at least a negligible minority.

The third quarterly instalment of the *Guy's Hospital Reports*[9] opens with an important paper by Dr. L. J. Witts, who, by collecting and critically analysing fifty cases of simple achlorhydric anaemia, establishes the existence of this form of anaemia in a way which the previously recorded cases had not effected. It is common, especially in middle-aged women, and the achlorhydria, which may be hereditary or acquired, precedes the chlorotic, microcytic, and secondary anaemia, and persists after the anaemia is cured. The proper treatment is by transfusion or iron in twice the maximum pharmacopoeial dose, and must be continuous to prevent relapse. The administration of liver preparations and hydrochloric acid has no effect on the anaemia. Great interest attaches to its relation to Addison's anaemia; it is probable that they both depend on achlorhydria, which in males more commonly induces a megalocytic anaemia, and in females a microcytic anaemia. In both forms the bone-marrow is hyperplastic, with in one predominance of megaloblasts, in the other of normoblasts. Glossitis and splenomegaly occur in both; subacute combined degeneration, usually associated with Addisonian anaemia, may also occur in simple achlorhydric anaemia. Dr. H. G. Close contributes a very interesting article on the hospital incidence of certain diseases, showing by comparison of the two five-year periods, 1910–14 and 1921–25 inclusive, those diseases which have become more frequent, less frequent, and have remained stationary; lobar pneumonia, rheumatic fever, chorea, and thoracic aneurysm have, like typhoid fever and chlorosis, as is generally recognized, become less common; whereas Addison's anaemia, Hodgkin's disease, and tabes dorsalis have not shown any change. Dr. A. F. Hurst and Mr. J. Gaymer-Jones describe megalo-ureter due to achalasia of the uretero-vesical sphincter, and Mr. Ralph Thompson reports the cases of vesical calculi during the period 1910–29 inclusive. Dr. J. T. Irving writes on the permeability of the renal cell to glucose, and Mr. Gibberd, in his report of the maternity department, considers the low incidence of eclampsia to be, in part at least, due to a fortunate local rarity. Cases of duodenal retro-peritoneal hernia are reported by Dr. Venables and by Mr. P. Turner and Mr. Scholefield. Mr. Bromley reports cases of obstruction of the small intestine due to foreign bodies, such as gall-stones, to inflammation in or around the intestinal wall, and to new growths.

The first number of the *Collected Publications from the Robert Dawson Evans Memorial for Clinical Research and Preventative Medicine*[10] (Boston, Mass.) is devoted to endocrine studies reprinted from *Endocrinology*, and is dedicated to "the living memory of Maria Antoinette Evans, the Founder." The work began in 1912, and during these seventeen years between four and five thousand persons have been investigated clinically and by laboratory methods. The first paper, describing a general method for the differential diagnosis of abnormal endocrine function, is by Dr. A. W. Rowe, and contains an analysis of a thousand cases thus investigated; subsequent examination of more than two thousand cases confirmed the conclusions in this paper which was published in 1928. The last paper, also on the differential diagnosis of endocrine disorders, and published in August, 1929, is by Dr. Rowe. The other seven papers are contributed by Dr. Rowe in collaboration with Dr. C. H. Lawrence, and deal with disorders of the pituitary, thyroid, gonads, and adrenals, with pluriglandular disease, and five hundred cases simulating endocrine disorders. The collection is a monument of laborious investigation, and is strikingly illustrated.

A booklet entitled *The Problems of Rinderpest in India*,[11] by the late director of the Imperial Institute of Veterinary Research, Muktesar, India, describes what is the most formidable cattle scourge in India, and discusses the methods of control of the disease. The disease is essentially one of cattle, and the author describes how the virus has been attenuated by passage through goats, and how this attenuated virus may be used for the vaccination and protection of cattle.

[7] *Psychopathology: Its Development and its Place in Medicine.* By Bernard Hart, M.D.Lond., F.R.C.P.Lond. London: Cambridge University Press. (Demy 8vo, pp. v + 178. 8s. 6d. net.)

[8] *General Practice.* By Ernest Ward, M.D.Camb., F.R.C.S.Eng. London: J. Bale, Sons and Danielsson, Ltd. 1930. (Cr. 8vo, pp. 108. 3s. 6d. net.)

[9] *Guy's Hospital Reports*, vol. 80 (vol. 10, Fourth Series), No. 3, July, 1930. Edited by Arthur F. Hurst, M.D. London: The Lancet Ltd. (Med. 8vo, pp. 253–378; 18 figures. Annual subscription £2 2s. net; single numbers 12s. 6d. net.)

[10] *Collected Publications from the Robert Dawson Evans Memorial for Clinical Research and Preventative Medicine.* No. 1, *Endocrine Studies.* Boston: F. J. Barnard and Co., Inc. 1929.

[11] *The Problem of Rinderpest in India.* By J. T. Edwards, D.Sc., M.R.C.V.S. Bulletin No. 199, Imperial Institute of Agricultural Research, Pusa. Calcutta: Government of India, Central Publication Branch. 1930. (7¼ × 9¾, pp. 16; 12 plates, 9 charts. Rs.1.4, or 2s. 3d.)

PREPARATIONS AND APPLIANCES.

A Rectal Support for Anal Prolapse.

Dr. E. J. Lloyd (Bangor) writes: In the course of more than fifty years as a general practitioner I have had several cases of prolapsus ani, especially in old people where an operation would not be advisable. I could never obtain a satisfactory support in these cases, so I had to devise one myself.

First, I found I must have a well-made padded leather belt, buckling in front. This was supplied by Messrs. Ellis, Son and Paramore, Sheffield, and the appliance was completed as follows, on my instructions. A thick rubber piece is folded on itself in the middle part, but leaves a loop at the top and one at the bottom. This rubber piece is about 8 or 9 inches long and about 3 inches wide. One end of the belt is passed through the upper loop and on to the middle of the belt. The under strap is made of a round rubber piece, with leather bands attached to each end; there are holes in it for fastening it to studs, one on each side of the front of the belt. The under strap is passed through the lower loop of the rubber central piece as far as its middle. A rubber plug is unnecessary, and uncomfortable to wear.

After every act of defaecation the prolapsed portion of the rectum must be carefully returned, by pressure upwards, with the fingers of the right hand; it is then bathed with a pad of cotton-wool, dipped in a weak solution of an antiseptic such as liquor carbonis detergens (not lysol), and subsequently dried with a piece of cotton-wool. It is advisable to place a piece of cotton-wool of about 4 by 3 inches to cover the anus, and to bring the rubber piece over the wool. The rubber piece should be washed frequently.

ABORTION AS A CAUSE OF MATERNAL MORTALITY.

Report of the Health Section of the League of Nations.

The interim report of the Ministry of Health's departmental committee on maternal mortality and morbidity[1] treated of abortion only briefly; in the monthly epidemiological report of the Health Section of the League of Nations for July[2] the question has received considerable attention, and a striking analysis of the available statistics is included. The significance of abortion as a cause of maternal deaths has only gradually been appreciated, as a reference to the international list of causes of death shows. Thus, in 1920 abortion was included under the general heading of "The puerperal state," and under the subheading "Accidents of pregnancy," but in 1929 it is given much more prominence, and classified as "abortion with septic conditions" and "abortion without mention of septic conditions, but including haemorrhage." The change represents not only an alteration in medical opinion but the appreciation of an important social factor, introduced by the increase in the number of abortions. Indeed, the report states categorically that the maternal death rate is more affected by abortion than by delivery at term.

Prevalence of Abortion.

The legalization of abortion in Soviet Russia has already brought some interesting points to light, and will provide an opportunity for a thorough investigation of the problem as the public mind becomes more accustomed to the experiment. In the report of the Aberdeen Commission for the past ten years, the death rate among unmarried mothers was recorded as being almost double that of married mothers, while the puerperal death rate among them was three times that among married women. It is true that many unmarried mothers experience their confinements under less favourable conditions than the average married woman, and consequently stand a greater chance of developing puerperal infection, but it is also usually accepted that abortion, which is one of the primary causes of maternal mortality, is more frequent among unmarried women. In Russia the statistics for 1925 and 1926 show that the number of abortions, and hence the number of deaths, was higher among women whose marriage had not been registered; they also indicate that abortion is more frequent at the second pregnancy than the first. In countries other than Russia, of course, the difficulties of obtaining reliable statistics are insuperable.

Two factors enter into a study of abortion—the real or probable number of abortions in a country, and the proportion which lead to disease or death—and in neither case is it possible to make an accurate estimate. In Germany, according to certain investigators, abortions have risen from 240,000 in 1911 to more than a million in 1927; taken in conjunction with the birth rate these figures work out at 1 abortion to 8 confinements in 1911 and nearly 1 abortion to every confinement in 1927. But it is improbable that these estimates do more than guess at the truth, as the conflicting opinions of different authorities show; Walthard, in 1929, estimated the number of women who succumb to the operation at 15,000, while in 1926 Lippmann calculated this number at 35,000. The difference in economic conditions between the two years in question may have a bearing.

A certain amount of information can be gleaned from hospital records, and Professor Whitehouse has analysed the figures for abortions among 1,000 parturient women at the Birmingham General Hospital from 1924 to 1928; 3,223 children were born, and abortion occurred in 597 cases. In a similar inquiry made between the years 1911 and 1913 the proportion of women who had at least one abortion was 35.3 per cent. An estimate made by Professor Grzywo-Dabrovski at Warsaw is quoted which puts the rate at 1 abortion to 4.15 confinements, but these figures only relate to serious cases treated in hospital, and consequently merely give some indication of the morbidity due to abortion.

According to a report submitted to the National Association for the Prevention of Infant Mortality in 1929 by Dame Louise McIlroy, abortion since the late war is more frequent among married than unmarried women; unemployment and economic difficulties are mentioned as the chief causes of this transposition, and the opinion of Professor McIlroy is borne out by the experience of three observers in America, who found that among 672 deaths due to abortion 610 occurred among married, and only 60 among unmarried women.

Abortion in U.S.S.R.

Some of the most interesting figures quoted relate to Russia, where 80 to 85 per cent. of abortions are believed to be registered owing to its legalization. Here the average in the towns is said to be 25 abortions to 100 confinements, and higher in the large cities, reaching 70 per 100 confinements in Moscow. The proportion of abortions is said to be from 8 to 10 times greater in large cities than in country districts and small towns—possibly, suggests the report, owing to the fact that prejudice dies hard in rural districts, and hence secret abortion is more common and registration is less complete. Legal abortions are carried out in the hospitals, generally during the second month of pregnancy, while secret abortion is frequently practised at a late stage of pregnancy, adding considerably to the maternal danger. This may be compared with the state of affairs in Germany, where Lippmann estimates that some 35,000 women die yearly from complications of abortion; unhygienic conditions and the late stage of pregnancy at which secret abortion is carried out accounts for the high mortality rate.

Further Russian statistics show that abortion is most frequent between the ages of 20 and 39. A series of statistics of the age groups in cases of puerperal fever following abortion obtained in Prussia show that the greatest number of abortions occur between the ages of 30 and 40—that is to say, among women who have probably previously borne children. Another point emerging from Russian experience is that the number of abortions does not necessarily increase as a result of legalization, while the decline in secret abortions during the last few years and the performance of the operations in hospital have been accompanied by a corresponding decrease in maternal mortality. The death rate for legal abortions performed in hospital is very low, and in Moscow during 1926 artificial abortion was practised on 29,306 women without a single death, while among women admitted to hospital following secret abortion the death rate reached 1.2 per cent. Whatever arguments may be urged on moral or other grounds against the legalization of abortion in U.S.S.R. it appears to have been effective in preventing the shocking waste of maternal life. Whether in the long run the waste of infant life will more than counterbalance this gain remains to be seen.

Analysis of Abortion Statistics.

Roesle is quoted as urging the compulsory notification of abortion in every country; but, as the authors of the report point out, it will never be possible to induce people to notify an operation which is punishable by law. Members of the medical profession are not prepared to register a fact which may be injurious to their patients, regarding it as a breach of professional confidence. Holmes, Mussey, and Adair, who analysed statistics of accidents of pregnancy occurring before the seventh month in the United States of America, found that among 672 registered abortions 189 were classified as spontaneous, 69 as therapeutic, 328 as induced, and in 89 the cause was not specified. Experience has shown that in the large towns many cases of abortion are induced, but are classified as therapeutic so

[1] *British Medical Journal*, August 9th, p. 223.

[2] Monthly Epidemiological Report of the Health Section of the Secretariat. Ninth Year, No. 7. Geneva, July 15th, 1930. 1s. 6d.

as to avoid the attention of the judicial authorities; abortion therefore probably plays a large part in the maternal mortality of the United States, and if the unregistered were added to the registered cases the number of deaths would be at least equal to those caused by accidents of pregnancy and labour. The same observers found that deaths due to abortion were less common in the series among white women than among negresses, probably owing to the difference in economic conditions between the two races. They estimate that puerperal sepsis is responsible for death in 90 per cent. of deaths following induced abortions and in 60 per cent. of so-called spontaneous abortions. Swiss statistics show that during the last thirty years maternal mortality following puerperal fever has been reduced by half, but that deaths due to abortion remain at a high level, and exceed 20 per 1,000.

Causes of Increased Abortion Rate.

Mme Lébédiva, head of the Maternal and Infant Welfare Section at the Soviet Commissariat of Public Health, considers one of the causes of the increase in abortion to be the enormous increase of women workers which has occurred in every country; the housing shortage and the decline in economic prosperity have played a part, and the decrease in infant mortality, which has been considerable in most countries during the last twenty years, has doubtless thrown an additional burden on the poorer class of parent, which has made the avoidance of further responsibility seem all the more urgent.

THE INTERNATIONAL SILICOSIS CONFERENCE AT JOHANNESBURG.

[From our Pretoria Correspondent.]

The conference on silicosis convened by the International Labour Office of Geneva was held in Johannesburg at the offices of the Transvaal Chamber of Mines during the fortnight August 13th to 27th. At the opening meeting the chair was taken by Mr. E. J. Phelan, chief of the diplomatic division, who explained that the International Labour Office was the executive secretariat of the International Labour Organization, a society comprising fifty-six States which had entered into a contract that they would collaborate in improving the conditions of labour. In the constitution of the organization industrial disease was specifically referred to, and one of the sections of the Labour Office was devoted to the study of this subject. Owing to the distance of South Africa from Geneva a conference, though approved by the International Labour Office, would probably never have been held but for the generosity of the Transvaal Chamber of Mines.

All the Governments whose minds have been exercised by the incidence of silicosis were represented at the conference: Australia by three members, Canada by one, Germany by two, Great Britain by four, Italy by one, the Netherlands by one, the Union of South Africa by ten, and the United States by two members. The International Labour Office was represented by three members of the diplomatic division, and by two members of the Industrial Health Service, including Dr. L. Carozzi, the technical adviser. At the first business session Dr. L. G. Irvine, chairman of the Miners' Phthisis Medical Bureau, Johannesburg, was elected chairman of the conference. Sir Spencer Lister, director of the South African Institute for Medical Research, and Dr. A. E. Russell of the United States Public Health Service, were elected vice-chairmen. In accordance with the usual Geneva procedure a resolutions committee and "reporters" on the three sections into which the subject was divided were also elected. Their reports, after amendment by the full conference, will eventually be published in a volume, which will include the various papers submitted beforehand and an account of the proceedings.

Preventive Measures.

The reporters elected for this part of the discussion were Professor Loriga, chief medical inspector of factories, Italy; Dr. Badham, medical officer of industrial hygiene of the New South Wales Department of Public Health; and Mr. Roberts, technical adviser to the Transvaal Chamber of Mines. All the papers submitted under this and other sections, which had been printed in Geneva and previously circulated, were not read at the meetings, but their substance was discussed on broad lines, members freely expressing the results of their own experience.

The discussion indicated that silicosis becomes noticeable after widely differing periods of exposure; it is contracted through inhaling for a sufficiently long period dust containing percentages of silica as low as or even lower than 30; the greatest amount of harm is done by the smallest particles, those less than about 3 microns in size. Some evidence was adduced in favour of the value of other particles, such as coal or shale dust, inhaled simultaneously with silica dust; but experience, particularly in Germany, was definitely against the prophylactic value of alternate employment in silica and coal mines. The alleged immunity from silicosis in some districts where quartz in company with non-siliceous rock was being mined was unfounded; the incidence of silicosis had been obscured by the migratory nature of the population and by the inadequacy of medical examination where not required by laws relating to compensation. It was generally agreed that the power of resistance of the individual was an important feature. Evidence was also forthcoming that alternative employment and periods free from exposure to silica dust delayed the formation of silicosis; some members, however, maintained that it was only the total periods of exposure which mattered, whether such periods had been continuous or not. It was strongly urged that for the critical and scientific study of dust particles a standard method of assessing the dust content of air, both by counting and gravimetrically, was required. Only if assessed by such standard means would the findings be available for international comparison. The conference recommended that as soon as such standard methods had been perfected a complete survey of the dust concentration in dusty industries throughout the world should be made.

For the prevention of dust in the Witwatersrand Mines greatest reliance has always been placed on the use of water. Water is sprayed into the air; all surfaces of the rock where work is being done are kept wet, with the object of securing a fly-paper effect in retaining dust which might settle on them; water is applied to the point of percussion—for example, by means of an axial water feed in drills. Only the third of these methods was considered to be of any real value in the prevention of silicosis. The very small particles of silica which are responsible for silicosis are not likely to settle on roofs and walls and, like micro-organisms of the same size, will not be caught by a spray. Unnecessary humidifying of the air is to be avoided, particularly in the deep mines, where it interferes greatly with the cooling mechanism of the body by preventing evaporation of sweat; a humid atmosphere and the presence of droplets have been shown experimentally to increase the risk of various infections considerably.

Other methods of dust prevention investigated were the application of exhaust draughts at or near the point of origin of the dust, dust traps, masks, and ventilation. Some years ago experiments were conducted on the Witwatersrand to maintain the surface of underground walls and roofs in a condition to cause dust particles to adhere to them. They were sprayed with solutions containing molasses, calcium chloride, and other hygroscopic substances; but in the humid atmospheres produced underground these substances were found to absorb moisture so readily that they soon trickled down into the gutters.

Medical Aspects of Silicosis.

The reporters in charge of this portion of the discussion were Dr. L. V. Gardner of the Trudeau Sanatorium; Dr. A. J. Orenstein, the superintendent of

sanitation of the Rand Mines, Ltd.; Dr. E. L. Middleton, medical inspector of factories, Great Britain; and Dr. W. Steuart, radiologist to the Miners' Phthisis Bureau, Johannesburg.

Silicosis was defined as a pathological condition of the lungs due to inhalation of silicon dioxide, which could also be produced experimentally in animals. To produce the condition the silica particles must reach the lungs in sufficient amount, over a sufficiently long period of time; they must be less than 10 microns in size, and must be chemically uncombined. The minimum time and concentration have not yet been determined; they appear to be to some extent reciprocally variable. Experimental evidence indicates that the solubility of silica in the tissues is the essential factor in the causation of silicosis. The progress of the silicotic condition is unfavourably influenced by infection of the lung with pathogenic organisms, tuberculous infection being especially bad. Other dusts, harmless in themselves, are capable of producing serious pneumonoconiosis in a lung in which the silicotic process has been established. Opinion varied as to whether intermittency of employment retarded the onset of silicosis. The local evidence regarding native labourers, who work for periods of about nine months at a time separated by varying periods at their kraals, tends to indicate that intermittent employment is less harmful than continuous employment of the same total length.

Pathologically five stages of the disease are recognized. First, there is a fine bronchiolitis characterized by an accumulation of dust-filled phagocytes in the terminal bronchioles; then an accumulation of dust containing phagocytes about and in the intra-pulmonary lymphoid tissue and their transportation through the lymphatics into the tracheo-bronchial lymph nodes. It is not until the next stage is reached that the condition constitutes silicosis in the legal sense. This stage is characterized by the gradual development of fibrous tissue within the mass of phagocytes and the formation of a characteristic nodule of hyaline fibrous tissue. Next, degenerative changes occur in these foci. Finally, the hyaline nodules increase in size by extension at their periphery; coalescence of adjacent nodules takes place and brings about involvement of extensive areas of the lung.

Clinically three stages can readily be recognized. In the first stage respiratory symptoms may be slight or absent; working capacity may be slightly impaired; there is a departure from normal of physical signs, and the radiogram shows dense linear and nodular shadows. In the second stage all the physical signs are increased, the nodular shadows are increased in number and size, and there is some degree of definite impairment of physical capacity. In the third stage all signs and symptoms are grossly exaggerated, and there is total loss of working capacity. Pulmonary tuberculosis may be present in any of these stages, altering the symptoms, physical signs, and the degree of incapacity. The reporters recommended the establishment of an international classification of silicosis, an internationally comparable radiographic technique and terminology, and the institution of further studies in the correlation of radiographic appearances and morbid anatomy of silicosis and silicosis complicated with tuberculosis.

Prognosis, Compensation, and After-care.

The reporters for this section were Dr. G. Cunningham, director of the Division of Industrial Hygiene of the Canadian Health Department; Professor A. J. Hall of Sheffield University (Chairman of the Medical Research Council Committee to investigate pulmonary diseases from silica and other dusts); and Professor Koelsch, State industrial medical officer, Munich, Germany.

It was recognized that silicosis, whether complicated or not by tuberculosis, constituted an occupational disease which might involve reduction of working capacity. An initial medical examination to ensure a certain standard of physique should be generally adopted in industries in which the risk of exposure to silica dust is great; periodic examination of such workers is also essential. Whether it is in the worker's interest to leave the industry in the early stage of the disease was not clearly established. South African experience suggests that downward progress is not generally arrested on leaving the industry. It is probable that reduced economic conditions of life consequent upon leaving a highly paid industry and the associated mental worries are largely responsible for this. On the other hand, continuation in underground employment appears definitely to aggravate the progress of the disease except in certain selected mining occupations.

The conference recommended that in assessing the amount of disability account should be taken of the clinical and functional condition as a whole. The determination of disability should be entrusted to an independent medical expert, or body of experts, possessed of the requisite clinical and technical knowledge and provided with suitable apparatus. It was suggested that removal from all industrial occupations involving exposure to noxious dust should be enforced in all cases of open tuberculosis. Where legislation provides for the compulsory removal from occupations involving exposure to silica dust of workers affected by silicosis, it was suggested that such compulsory removal should not necessarily be applied to workers who have been in the same industry for a period of not less than fifteen years and have reached the age of 45 years.

Regarding after-care, the conference recommended that sanatorium treatment should be provided for suitable cases. Rehabilitation schemes, such as farm settlements, have in most cases proved unsuccessful in the past. Further investigation into this problem was strongly urged.

ROYAL MEDICAL BENEVOLENT FUND.

At a recent meeting of the committee thirty-six grants were made, amounting to £655 10s. 6d. The following are particulars of a few cases helped.

M.B., B.Ch., aged 36, married, with three children, aged 5, 3, and 1. A medical man, writing in support of the case, says: "The applicant is a general practitioner in this town who put up his plate some twelve or eighteen months ago, and who unfortunately two months ago developed rheumatic fever. He is now in hospital. He is a married man with three children. He has no reserves, and is therefore falling into debt, having his wife and family to maintain, and to pay a locum-tenent at the same time." Voted £20, and further help is being sought from another charity. Case will be reconsidered in three months' time.

Daughter, aged 46, of M.B., B.S. Father died at the age of 80 this year. A medical man, writing in support of the case, says: "I was intimately associated with her late father, one of Nature's gentlemen, who worked hard in a poor-class practice for over fifty years, often—too often, alas!—without any remuneration whatsoever. For about four or five years before his death he was an invalid, and for over a year was bed-ridden. During all this time he was nursed by the applicant, whose devotion to him was exemplary." Voted £20. It is hoped that the applicant will soon be able to find employment for which she is trained.

Daughter, aged 65, of M.D. At the death of her father in 1894 the applicant was left quite unprovided for and untrained in any way to earn her own living; consequently she had to go out into the world to do what she could. She became a housekeeper at a girls' school. Present income £52 a year. Voted £26.

Widow, aged 62, of M.R.C.S., L.R.C.P. The husband was in receipt of an annuity from this Fund, as he had broken down in health; he also had a pension of £51 a year. On his death in 1930 both the annuity and pension ceased. The widow's sole support is her daughter, who is earning 52s. a week. Voted £26; help will be sought from other charities.

Widow, aged 70, of M.B. Since the death of her husband in 1897 the applicant has worked as a nurse-companion. A medical man, writing in support of the case, says: "She worked for nearly thirty years as a nurse-companion, and now lives with two sisters, daughters of a medical man, also in very reduced circumstances. They club together, and just rub along somehow. The applicant is getting on in life, and is not fit to do much now except look after herself." Present income £55. Voted £26.

Subscriptions and donations are very urgently needed in order that the activities of the Fund may be continued and applicants given the help they need. Cheques should be forwarded to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, W.1.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, Tavistock House (North), Tavistock Square, W.C.1.

British Medical Journal.

SATURDAY, OCTOBER 4TH, 1930.

NASOPHARYNGEAL INFECTIONS.

THE climate of this island during the winter months, coupled with the conditions that prevail in our great industrial cities, is responsible for an enormous amount of respiratory disease, and yet we know remarkably little about the causation of these infections. In stating this reference is not being made, of course, to the pneumonias of pneumococcal and streptococcal origin—though in the case of the latter organism it is not clear how far it can act alone in this role—but to that multitude of infections of the respiratory tract which occupy so large a place in our national bill of health, and lead to a considerable loss in efficiency and working time. It has become the habit to attribute these infections to the pneumococcus, the streptococcus, the haemophilic bacilli, or to Gram-negative cocci such as *Micrococcus catarrhalis* (*N. catarrhalis*) for the obvious, but not very good, reason that these bacteria are all that can be found by a microscopic and cultural examination. But at the back of the minds of many has been the thought that these organisms are merely secondary invaders, and that the prime cause for the time eludes us. Direct experiment in this field has been hampered by the lack of a suitable experimental animal. Apart from man the higher apes alone would appear suitable, and their use is limited for obvious reasons. That they are of service, however, has been demonstrated by the recent work of Dochez and his colleagues[1] in the United States; by the use of the chimpanzee, these workers have obtained evidence which strongly suggests that the common cold is caused by a filterable virus.

Another mode of approach to this question would be to observe over a considerable time the flora of the respiratory tract of a representative sample of a community, and to compare the findings with the incidence of respiratory diseases, noting correlative fluctuations. Such an experiment has been conducted in Manchester by R. H. Blackburn, R. B. Boston, E. St.G. Gilmore, R. Lovell, S. P. Wilson, and Mrs. M. M. Smith, and their findings are embodied in a report to the Ministry of Health.[2] This investigation extended from July, 1925, to September, 1927, and during this period the nasopharyngeal flora of one hundred volunteers, drawn from different environmental conditions, was examined at monthly intervals; in addition to this, between November, 1925, and August, 1926, one hundred volunteers, who were examined once only, were drawn each month from a variety of sources. The bacterial species envisaged were the pneumococcus, the "influenza" bacillus, the haemolytic streptococci, and the Gram-negative diplococci. Briefly stated, the results were as follows. Both in the winter and spring of 1925-26 and 1926-27 there was a considerable increase of respiratory disease in Manchester, but whereas in the former period there was little or no influenza, the latter period was marked by an epidemic wave of influenza of moderate severity, which reached a peak in March, 1927, and thereafter rapidly declined. During the period of survey the carrier rate of Gram-negative diplococci in the sample community remained at a uniformly high rate, the only finding of interest being the comparative rarity of *Micrococcus catarrhalis*. Although the carrier rate of both the pneumococcus and haemolytic streptococci showed fluctuations, these bore no significant correlation with the incidence of respiratory disease. In the case of the "influenza" bacillus, however, the findings were more significant. Taken as a group the carrier rate curve of haemophilic bacilli closely followed the curve of incidence and mortality from respiratory disease, but not the curve of influenza mortality, for, as has been already mentioned, the winter and spring of 1925-26 were marked by an almost complete absence of influenza.

Nevertheless, as the authors of the report point out, the group of haemophilic bacilli would not appear to be a homogeneous one. The only biological character affording a sharp line of demarcation within the group is the ability to form indol, and when the incidence of indol-forming haemophilic bacilli was plotted separately it was found to bear a significant relationship to the incidence of influenza. The carrier rate of these indol-producing strains began to rise some two months before the onset of the influenza epidemic, and then fell away fairly rapidly. It must be admitted that this observation is of considerable interest. Naturally it does not prove that influenza is caused by the indol-producing strains of the influenza bacillus, but it is a valuable piece of circumstantial evidence. It should be remembered also that had Fleming's method of isolating the influenza bacillus been adopted a totally different carrier rate would have been obtained. Fleming[3] has shown that with suitable technique these organisms can be demonstrated in practically every nasopharynx, so that an increased carrier rate in this investigation in reality means an increase in the number of these haemophilic bacilli in the flora of the individual nasopharynx. Whether this would apply also to the indol-producing strains it is impossible to say, but the findings in this report are sufficiently interesting for us to hope that similar investigations, with modifications, such as the use of Fleming's method of isolating the influenza bacillus, will be undertaken. Information of considerable value in forecasting influenza epidemics might be forthcoming.

[1] Dochez, Shibley, and Mills: *Proc. Soc. Exp. Biol. and Med.*, 1929, 26, 562.

[2] Blackburn, R. H., Boston, R. B., Gilmore, E. St.G., Lovell, R., Wilson, S. P., and Smith, M. M.: Reports on Public Health and Medical Subjects, No. 57. 1930. London: H.M. Stationery Office.

[3] Fleming, A.: *Brit. Journ. Exp. Path.*, 1929, 10, 226.

ANNUAL REPORT OF THE MINISTRY OF HEALTH.

THE annual reports of the Ministry of Health are not, it must be confessed, inspiring documents. The Chief Medical Officer of the Ministry, in his own reports (which are published separately), makes an annual survey of the health of the nation; he describes the scope and achievements of the public health services, discusses the principles and ideals of preventive medicine, and sets out the problems, medical and social, upon whose solution the attainment of these ideals depends. His reports serve both as records of progress and as signposts to the future. Less obviously, yet surely, the statistical analyses issued by the Registrar-General—above all, his analyses of occupational mortality, fertility, and infant mortality—indicate the triumphs as well as the tasks of preventive medicine; by their quantitative demonstration of the influence of environmental factors on individual and social

health they point plainly to causes of sickness and death which the health services of the nation must ultimately bring under control. Set the difficult problem of not overlapping with these documents, the Ministry of Health can do little except record the more important business it has transacted during the year, presenting bald administrative detail in connexion with international health work, general health questions, sanitary administration, inspection and supervision of food, infectious diseases, maternity and child welfare, welfare of the blind, housing of the nation, town planning, local government and local finance, administration of the Poor Law, national health insurance, and many kindred matters, and offering, if not a very exciting, at any rate a useful report from which the careful reader may gather some idea of the range of services with which this comparatively young Ministry now has to deal.

Under the heading "Inspection and Supervision of Food" the Ministry describes in the report for the period 1929-30[1] the new procedure that has been adopted in connexion with the tuberculin testing of cattle. The Tuberculin Committee having issued a report in 1929, in which it stated the conclusion that the modified double intradermal test was simpler to apply and gave better results under ordinary farm conditions than the subcutaneous test, and that the ophthalmic test was unreliable, the Ministry, in January, 1929, informed graded-milk producers that the ophthalmic test was no longer needed, and that the question of requiring the modified double intradermal test to the exclusion of the subcutaneous test would be considered at the end of the year. After further consideration it was decided to make the new test compulsory, and at the close of last year licencees were informed that all tuberculin testing of licensed herds must be made by this method. During the twelve months under review 133,584 samples were analysed under the Food and Drugs (Adulteration) Act, 1928, and of these 7,260, being 5.4 per cent. of the whole, were found to be adulterated or not up to standard. In the same period 511 contraventions of the Food Preservatives Regulations were reported, a reduction of 264 on the figures for 1928. A few samples of graded milks, though complying with the conditions of the Milk (Special Designations) Order, 1923, as to bacterial purity, were reported to contain less than 3 per cent. of fat, and one analyst has expressed the opinion that fat deficiencies in graded milk occur frequently, and seem to be due to the methods employed in bottling. In the section dealing with infectious diseases attention is drawn to the fact that the number of notifications of encephalitis lethargica and the number of deaths from that disease were practically equal; any fatality rate calculated on these figures would, the report states, be "merely artificial, and not representative of the true rate." Although mild small-pox continues to prevail there has been a further decline in the number of cases notified. A slight increase is recorded in notifications of diphtheria, and a considerable increase in notifications of scarlet fever and pneumonia; the fatality rates for diphtheria and scarlet fever have, however, remained low, though the decline recorded in previous reports has not been maintained.

In connexion with tuberculosis, the announcement is made that Dr. Camac Wilkinson's method of administering tuberculin treatment is about to be investigated under the supervision of representatives of the Medical Research Council, the London County Council, and the Ministry itself. Attention is again drawn to the fact that in certain areas a large proportion of cases of tuberculosis do not come to the knowledge of medical officers of health until death has taken place, and the Ministry suggests that in such areas the local authority should take every opportunity of reminding medical practitioners of the facilities available under the tuberculosis schemes for the diagnosis of doubtful cases, through consultation with the tuberculosis officer, examination of sputum, *x*-ray examination, and so forth. At the venereal diseases treatment centres the outstanding features of the year's work have been the continued increase in the total attendances at out-patient clinics, the increase in the number of cases of gonorrhoea, and the decrease in the number of cases of syphilis. The figures bear out the view that a larger proportion than formerly of gonorrhoea patients now attend the centres, though the proportion still falls short of the estimated relative incidence of the two diseases.

During the year under review 14,600 doctors were engaged in practice under the National Health Insurance Acts, and the number of insured persons entitled to benefit was over fourteen million. Medical benefit cost £8,666,000, of which sum medical practitioners received £6,256,000 in respect of their duties in connexion with attending and treating insured persons, the balance covering pharmacists' fees, and the cost of effecting adjustments of the main finances of medical benefit to various special conditions arising under the Acts or in the circumstances of insurance practice. It is pleasant to read that with the co-operation of the Insurance Acts Committee of the British Medical Association 113 doctors practising in sparsely populated country districts have received financial help enabling them to attend courses of post-graduate study, as compared with the previous year's figure of 89. When the British Post-Graduate Hospital and Medical School comes into existence we may hope for a large increase in the number of practitioners, rural and urban, attending "refresher courses."

These miscellaneous facts have been taken almost at random from the report, and serve, not as an epitome of its contents, but merely as a very rough indication of their nature. The report covers so great a variety of topics that it is impossible to extract from it an essence for easy administration in a column or two of print. It is to be commended, not as embodying material to be studied systematically, but as a work of reference. For the latter purpose it is invaluable.

[1] Eleventh Annual Report of the Ministry of Health, 1929-30. London: H.M. Stationery Office. Cmd. 3667. 4s. 6d. net

PREVENTION AND TREATMENT OF CRIME.

Among a number of interesting papers in the current issue of the *Howard Journal* is a thoughtful contribution by Dr. R. D. Gillespie, on the service of psychiatry in the prevention and treatment of crime. The psychiatrist, as such, is professionally in a position which requires him to take a strictly objective view of crime and criminals. His functions are to study the factors, both those residing in the psychic peculiarities of the delinquent himself, and those conditioned by his environment, which appear to have exerted an influence in the determination of his anti-social behaviour, and also to suggest methods of dealing with the "patient" which may be instrumental in bringing about a "healthy" social reaction. Dr. Gillespie observes that the psychological contention of crime is that, like mental illness, it is a symptom—a symptom of indi-

vidual maladaptation to the social environment. Crime is not as a rule the outcome of mental illness in the ordinary sense, although there is a small percentage which definitely is so, but a cognate manifestation of social maladjustment. Crime, in many of its instances, and mental disorder, are on this view on a parity, for investigations of the life history of criminals and offenders, after the manner in which the mentally sick are investigated, have shown that similar factors are often at work. There are, for instance, the more crude and obvious causes, such as defective home environment and training, and also the more personal and less conscious factors, which involve repression and perversion of instinctive trends. Psychiatry has already contributed much to the problem of crime by recognizing that it appears more easily in certain types of individual than in the average person submitted to the same temptations and opportunities. Dr. Gillespie points out that the recognition of several types of antisocial persons should enable us to forestall the appearance of criminal acts in individual examples of such types. A number of delinquents are obviously mental defectives. Estimates of the proportion of these vary a good deal, but some of these are distinctly high. Thus, of the inmates of reformatories, training schools, workhouses, and penitentiaries in the United States, where fairly complete surveys have been made, 31 per cent., Dr. Gillespie states, have been found to be mentally defective. It is the so-called borderline defective, with sufficient intellect to pass muster on ordinary inspection, but with deficient foresight and emotional control, who is difficult to detect, or, if detected, to handle effectively. Here the preventive diagnostic service of clinical psychology has to be reinforced, when practicable, by additional legal protection. It too often happens at present that no treatment can be enforced, because the patient is not sufficiently defective to be certifiable, or because there is no available accommodation. Then there is another group, proportionately larger in prison populations than that of the intellectually defective, which is also capable of diagnostic prediction. They comprise, according to some statistics, as many as 45 per cent. of the prison population. These are the so-called "psychopathic personalities." It is obvious that, apart from the general social conditions which nourish crime, preventive measures are indicated, especially with the psychopathic types and with the mentally defective. Early diagnosis before antisocial acts appear is not only desirable but possible. Still better is it, as Dr. Gillespie suggests, to prevent the creation of psychopathic personalities; for since many of these begin to be created in childhood, it is clear that, so far as psychological measures are concerned, prevention must begin then. At the present time it may certainly be said that the facts referred to above are being increasingly appreciated. In all directions active measures are being taken to prevent the development of delinquent traits in children, and to treat them along psychological lines when they first make their appearance. Thus child guidance clinics, special schools and classes for the backward, voluntary associations which supplement the work of statutory committees, advisory psychiatrists in connexion with the children's and juvenile courts, and the education of teachers in regard to the significance of abnormal traits in their pupils—all such developments and organizations are calculated to do something to diminish the incidence of delinquency in the community. In addition to the paper on which we have commented the *Howard Journal* contains a number of other interesting contributions. A condensed account of the evidence given before the Select Committee on Capital Punishment, in which the attitude taken by each witness is broadly outlined, will be found very helpful to those who are interested in this important social problem.

CALCUTTA SCHOOL OF TROPICAL MEDICINE.

THE formal teaching of tropical medicine is so commonly associated with the schools in London, Edinburgh, and Liverpool that it is too often forgotten that the British Empire possesses another active and flourishing school in Calcutta. The annual report for 1929[1] shows how extensive and many-sided are its interests, both in teaching and in research. The school is under the directorship of Lieut.-Colonel Acton, and is organized both as a school of tropical medicine and an institute of hygiene. It is now common knowledge that the Government of India has accepted the munificent offer of the Rockefeller Foundation to build and equip an All-India Institute of Hygiene in Calcutta, which would carry out teaching work in close co-operation with the School of Tropical Medicine. Lieut.-Colonel A. D. Stewart has been appointed to act as director-designate, and a site is now in the process of being acquired and provisional plans have been made. When this institute is ready opportunities for research and instruction in the problems of public health will be available for students and workers in India, with special reference to Indian conditions. With the development of public health policy all over India on more concrete and definite lines the need for well-trained workers will become more and more necessary, and it is hoped that the new institute will supply the needs of India in this respect. In addition to the teaching at the Tropical School, the work of the Pasteur Institute, and the Carmichael Hospital for Tropical Diseases, there is a special staff working in the Leonard Rogers Laboratories on leprosy, kala-azar, hookworm disease, bowel diseases, diabetes, filariasis, and many other subjects of importance to medicine and hygiene in India. That the work carried out in Calcutta is active and comprehensive is shown by the fact that over eighty papers were published last year by the combined staffs. While most of the subjects studied are concerned with tropical problems, there is much to interest medical men in other parts of the world. The medical profession cannot afford to neglect the many important contributions to its knowledge which are being made in India.

THE CANCER ORGANIZATIONS OF AUSTRALIA.

THE system adopted in Australia of confining the use of radium as far as possible to practitioners who have gained adequate experience under direction has been found to have justified itself in the opinion of the first Conference of the Cancer Organizations recently held at Canberra. At each centre where radium is in use the cases receive the attention of a consultative group, which includes those physicians, surgeons, and other workers who are likely to be associated with the patient. Changes in technique, moreover, are not made without safeguards to ensure correct recording and accurate consideration of methods and results. In a discussion of the possible avenues of research, some of the aspects of lead therapy were mentioned by Dr. W. J. Penfold; it is necessary, he considers, to study the action of lead on normal tissues and to discover whether there are many individuals in whom there is less toxic action of lead on the general tissues than on the local growth. In a large number of patients this is not the case, and lead therapy has been abandoned in Queensland, in spite of one case of ovarian cancer which is doing well two years after treatment with lead. At the Commonwealth Serum Laboratories, Melbourne, researches are being made into the metabolism of the Twort alveolar carcinoma of the mouse which indicate that it falls into line with the mouse, rat, chicken, and

[1] Annual Report of the Calcutta School of Tropical Medicine, Institute of Hygiene, and the Carmichael Hospital for Tropical Diseases, 1929. Calcutta: Bengal Government Press. 1930.

human malignant tumours investigated by Warburg. Dr. H. G. Chapman referred to attempts which are being made by the Cancer Research Committee of Sydney University to immunize persons against tumours—notably against melanotic sarcomata. It is not expected that a biological immunity can be produced against the proteins of the growth, but it does not seem impossible that a chemical immunization may be obtained. The method used is to grind up the tumour cells, immediately upon removal, with sand and salt solution; the mixture is then centrifuged and the extract returned to the patient by intramuscular injection. No results of this treatment appear to have been quoted at the conference. In discussing the value of various forms of treatment, Dr. E. H. Molesworth of Sydney insisted strongly on the importance of the pathological study of all tumours that are to be treated with radium, and on the determination of their finer structure, the special characteristics of their cells, and their infiltrating activity. Upon these findings should depend the line of treatment adopted and the extent of the area treated. It would then become possible to group tumours according to their radio-sensitiveness—a characteristic almost always the reverse of their suitability for operation. He is strongly of the opinion that shorter wave-lengths exercise no selective action on tumour cells; the intense effect of embedded radium is localized, owing to the rapidity with which the intensity of its radiation fades as it leaves its source of origin. To take an example, although it would be possible to obtain the same dosage with deep x rays to the uterus as with embedded radium, the effects would be more widely distributed, and would involve the bladder and bowels; so that the value of radium lies not in the penetrating powers of its rays, but on their rapid absorption as they leave the source. If the theory of selective action of the shorter wave-lengths is abandoned, the matter has an economic importance, since it is cheaper to use the deep x-ray tube than a radium bomb at a distance of 20 or even 10 cm. from the skin; in addition, the danger to operators is considerably lessened by the use of the x-ray tube. The remarkable prevalence of precancerous and cancerous lesions in the skin in Queensland is to be the subject of an investigation by Dr. J. V. Duhig, director of the Brisbane and South Coast Hospitals Laboratory. It is hoped that his research will determine what effect, if any, sunlight has on the genesis of cancer of the skin, especially in white persons living in tropical or subtropical climates. The histological range of variation in hyperplasia of the skin with a malignant tendency is very wide, and clinical diagnosis is not reliable.

INTERNATIONAL LEAGUE AGAINST RHEUMATISM.

The second congress of the International League Against Rheumatism was held from September 18th to 22nd in Belgium and Holland, under the joint chairmanship of the President, Dr. R. Fortescue Fox, with Dr. N. M. Josephus Jitta, President of the Dutch Society, Professor Labbé (Paris), and Professor Graeff (Hamburg), following the Fifth International Congress on Physical Treatment at Liège. Both congresses were largely attended by representatives of fourteen countries, including many from Great Britain. At a joint sitting resolutions were unanimously passed calling upon the medical faculties in all countries to press for the inclusion of a course of instruction in physical treatment (theoretical and practical) in the curriculum of medical studies. The chief topic discussed was "Disorders of the circulation in the skin in chronic rheumatic diseases." In an introductory paper Professor Lunedei (Florence) described a method of recording skin temperatures and of examining the circulation in the skin—vasomotility, permeability, etc. Professor B. Prusik (Prague) read a paper on cutaneous capillaroscopy and the Congestion Test. Dr. J. van Breemen (Amsterdam) contributed a short report on micro-capillary appearances and low skin temperatures in rheumatic cases, and Dr. Foged (Copenhagen) dealt with the general study of skin temperatures and circulation. Other papers, out of a total of sixty communications, related to the pathogeny of rheumatism (Professor Kontchalovski of Moscow); the analysis of the gaseous constituents of venous and arterial blood in rheumatism (Dr. Pap Lagos of Budapest); muscular rheumatism (Professor Bárány of Upsala); omarthritis and vasomotor disturbances (Dr. Kahlmeter of Stockholm); proteinotherapy (Dr. Brabant of Brussels and Dr. Besse of Geneva); calcaemia (Dr. M. P. Weil of Paris); and the social and philanthropic work of the league. In Brussels Dr. Gunzburg, professor of physical treatment in the university, gave a demonstration of cases in the physical department of the Brugman Hospital, differing diagnoses and nomenclature being especially studied. Another series of demonstrations and discussions followed at the Clinic for Physical Treatment in Amsterdam, directed by Dr. J. van Breemen. Both at the Brugman Hospital and in Amsterdam it is understood that plans are being prepared for erecting a larger clinic for rheumatic diseases, with beds and facilities for study and teaching. At the meeting of the council and national representatives held in Amsterdam it was agreed to divide the work of the league into three sections: (1) pathological, including etiology and clinical study; (2) therapeutic; and (3) social. The connexion between rheumatism and housing was discussed at a public meeting in the Colonial Institute, Dr. Fox expressing gratification that England and Holland had been associated in the initiation of a movement of healing which in the course of years might perhaps, like Van Tromp's broom, sweep the seas of rheumatism.

CONTROL OF DANGEROUS DRUGS.

The hydra-headed traffic in opium and other narcotics (writes our Geneva correspondent) has again been the subject of protracted discussions at the meetings of the Fifth Committee, the committee which deals with social questions. The outcome is a request to the Assembly—which will be considered by the Assembly before it rises in the early days of October—to call a conference for the limitation of the manufacture of dangerous drugs. This conference will, if the Assembly agrees, be held in Geneva in May next, and all States, whether members or non-members of the League, will be invited to attend. Mrs. Mary Hamilton, M.P., gave some information concerning the procedure suggested by the British Government for the preparatory work. This includes, first of all, a conference of manufacturing countries (France, Germany, Switzerland, Netherlands, India, Japan, United States, Italy, Russia, and Turkey), at which the problem of distribution of supplies to be manufactured for the legitimate trade would be settled; in January the Advisory Committee on opium, on the basis of this preliminary conference, would prepare a draft convention, and the general conference in May, consisting of representatives of manufacturing countries, consuming countries, and countries growing raw materials, would draw up the final convention on the limitation of manufacture. As stated, the Fifth Committee has decided to ask for the large general conference in May next, but it is not clear yet whether the preparatory programme suggested by the British Government is acceptable to the other delegates. Some interesting information was given to the committee by the representatives of opium-producing countries. Sir Ali Khan, a member of the Indian Legislative Assembly, said that since 1925 special efforts had been made in India to reduce

the cultivation of opium. The exports of raw opium had been annually reduced by 10 per cent., and from 1935 no opium would be exported from India, except for medical and scientific purposes. India would shortly create a central information office for the purpose of combating more effectively the abuse of narcotics in that country. The Indian delegate urged that the League should make an appeal to the Turkish Government for efficient co-operation in the suppression of illicit traffic; according to his statement, factories in Turkey for the production of narcotic drugs have recently been developed, and it is feared that the output of these factories may be used for illicit purposes. Dr. Chao-Chu Wu, the Chinese Minister at Washington, declared that the general picture given of the opium evil in China was too dark. Stringent measures, he said, had been passed during the last twelve months by the National Government of China. China, however, he added, was prevented from centralizing its police control, owing to the situation created by extra-territorial rights. In illustrating the great danger for his people from the illicit use of narcotics—a greater danger, to his mind, than that arising out of the opium problem—the Chinese delegate said that the situation reminded him of the story of the man who fought the tiger at his front door while the wolf entered at the back. He took a different view from the Indian delegate with regard to the situation in Turkey. Although new factories had been established on Turkish soil, the capital for such enterprises came from outside Turkey. Hussein Khan Ala, the Persian Minister in Paris, referred to the efforts made by his Government to complete its monopoly of the production of opium so as to be in a position to ratify the opium convention in the near future. He said that the great economic importance for Persia of her opium production made it impossible for her to reduce it very suddenly. With regard to illicit traffic in Persian opium, he declared that the vessels smuggling opium in the Persian Gulf flew foreign flags, and were not under the jurisdiction of his Government. He hoped that Persia would be able to make arrangements with foreign Governments to find a lawful market for Persian opium, which would greatly help to put an end to the illicit traffic. M. Papadatos, an Under Secretary of State for Greece, said that while, five years ago, 80 per cent. of the opium coming from Yugoslavia passed through the port of Salonica, in 1930 this export had been entirely stopped, thanks to the severe control exercised by the Greek authorities, and the rigorous system of issuing export certificates. The production of opium in Greece, which had been 2,000 kilos in 1925, had fallen to little more than one-tenth that amount, and a recent decree had established a State monopoly for narcotics, with severe penalties for infringement. Mrs. Hamilton, again putting forward the British point of view, suggested that the rapporteur, in his final report to the Assembly, should not draw too dark a picture of the present situation. In her view there was no reason for pessimism so far as the League's work was concerned. The League had designed useful machinery in the fight against opium and the drug evil, and if the desired results were not obtained it was due to the non-use by Governments of the machinery of the League. In a similar strain spoke Mlle Hélène Vacaresco, the remarkable Rumanian woman, out of an experience of ten years on the Social Questions Committee. It was not any backwardness on the part of the League, she said, it was the great difficulty of overcoming the indifference of public opinion which accounted for the present position. Mrs. Hamilton added that when the West had done its duty with regard to narcotics, it would be time to make a strong appeal to the supplying countries to join in the general effort to do away with the shameful abuse of opium and other dangerous drugs.

INTERNATIONAL HOSPITAL CONGRESS.

THE first International Hospital Congress was held at Atlantic City, New Jersey, in June, 1929, and a printed account of the proceedings has now been issued from the executive committee's office (2, Avenue Velasquez, Paris) in a book of 300 pages. The meeting opened under the best auspices, with messages of good will from President Hoover, and from the Prince of Wales (as Patron of the British Hospitals Association), the King of the Belgians, and the French Minister of Health. Great Britain and Canada were well represented, and Australia, New Zealand, and South Africa each sent a delegate. All the arrangements were in the hands of a special committee of the American Hospital Association, whose annual convention followed the congress, the two events being welded together so as to form a continuous week of study and social intercourse. The introductory papers and debates are fully reported in the volume of proceedings. Among the subjects discussed were the economic aspects of hospital planning and administration, the respective fields of public and private hospital work, accommodation for persons suffering from mental and chronic diseases, the development of hospital care and treatment for patients with mental disease, and the setting up of a central organization for the hospitals of all countries to assist in development of service to the sick on an international basis. The main outcome of the congress, apart from the exchange of views and experiences, was the setting up of a provisional international hospital committee, whose members undertook to do their utmost to bring about the formation of regional and national hospital associations and their affiliation with the proposed central body. It was resolved that the next congress should be held in Vienna from June 8th to 13th, 1931, preceded by visits to British, Danish, and German hospitals, and followed by a visit to Budapest. The membership fee, for attendance and receipt of publications, is £1, which should be sent to Professor Tandler, Chief of the Welfare and Health Service of the city, 9, Rathausstrasse, Vienna.

ROYAL SOCIETY OF MEDICINE.

THE officers of the Royal Society of Medicine have decided to continue the holding of special discussions during the session 1930–31. The following subjects have been chosen for joint discussions between two or more Sections, the dates to be settled later and announced on the Society's diary card: (1) vascular tumours of the brain and spinal cord; (2) mental symptoms associated with cerebral tumours; (3) medical indications for premature termination of pregnancy; (4) adaptation of European women and children to tropical climates; (5) scabies and ringworm as transmissible between animals and man; (6) indications for and value of the intravenous use of germicides. The annual dinner of the Society will be held at the May Fair Hotel on Thursday, November 20th, at 7.30 p.m., with the president, Dr. T. Watts Eden, in the chair.

THE Long Fox Memorial Lecture will be delivered by Professor J. A. Nixon, M.D., in the Physiological Lecture Theatre of the University of Bristol on Tuesday, October 28th, at 5.15 p.m.; the subject will be the influence of food on the production and prevention of disease.

THE Semon Lecture entitled "Some Observations on Semon's Law" (derived from evidence of comparative anatomy and physiology) will be delivered by Mr. V. E. Negus, F.R.C.S., in the Barnes Hall of the Royal Society of Medicine, 1, Wimpole Street, on Thursday, November 6th, at 5 p.m.

Opening of the Winter Session.

WESTMINSTER HOSPITAL.

ADDRESS BY DR. SCOTT LIDGETT.

At Westminster Hospital Medical School the inaugural address of the new winter session was given on October 1st by the Rev. J. Scott Lidgett, D.D., Vice-Chancellor of the University of London. The chair was taken by Mr. Walter G. Spencer, vice-president of the hospital and consulting surgeon.

Dr. Scott Lidgett said that it was not for him to discuss the history, the progress, or the present position of the art of medicine, or to advise medical students as to the prosecution of their studies. He had the honour, however, as its Vice-Chancellor, to represent the University of London, with which the Westminster Hospital Medical School was so closely associated. He had had a good deal to do with public affairs for many years, and had worked in close co-operation with medical men in the University, on a very important Royal Commission, in various branches of local administration, and in numerous activities of voluntary philanthropy. He might perhaps, therefore, speak without presumption on the subject of the medical school, the university, and the State. In his judgement each of these three must respect the autonomy of the others. Each must respect the province of the others and not attempt to encroach upon their self-government and initiative. Yet the efficiency of each would be protected by ever closer co-operation between all three, and this co-operation was required if the welfare of the community as a whole was to be maintained. The need of such co-operation must constantly bring all three into common counsel, not only in regard to the co-ordination of practical arrangements, but also in regard to the ever-growing financial needs and the common requirements of medical training, local education, and public service. Financial needs were bringing the three great interests ever closer together at a time when the standard of efficiency was being raised, when immense fields of research demanded exploration, and when greatly increased practical calls were made upon medical skill and scientific knowledge. The medical school naturally turned to the university for financial assistance in maintaining its activities and developing its plans, while the university looked not only to the generosity of enlightened citizens, but to the State and to public authorities for the means of discharging its growing responsibilities. In return for this financial assistance it was the duty both of the medical school and of the university so to repay the State by the quantity and quality of their services as to make the generous consideration of their needs amply worth while, and to promote in the long run even economy in the State by the lightening of burdens which were in large part due to ignorance and neglect. The establishment of such common counsel was leading to a great measure of interpenetration. The Senate of the University had been enriched in knowledge and in wisdom by the eminent representatives of the medical profession who had served, and were serving, upon it, carrying back, it might be hoped, to the schools of medicine fuller understanding both of the policy of the University and of its profound sympathy with all the interests of medical education. The State from time to time called distinguished professors and doctors of medicine to its counsels, and the great influence of medicine was shown by the fact that the old Local Government Board had now become the Ministry of Health. The latest product of this co-operation and interpenetration was the scheme for the establishment of a post-graduate school of medicine, in the development and management of which the Government, the London County Council, the medical profession, and the Senate of the University were united. It was hoped that by this co-operation practical steps might shortly be taken which, while respecting all that was at present being done in this direction, would co-ordinate the scattered agencies that already existed and, in partnership with them, bring about a consummation that would make London, with its unequalled field of observation and its potential means of research, the centre to which the medical profession throughout the country and throughout the Empire would turn with ever-increasing confidence and hope.

Dr. Scott Lidgett then passed to the underlying considerations which made this co-operation essential:

"Medicine is an art. It is primarily remedial. It is concerned with healing, and with healing with a view to realizing the ideal of individual and collective health. It deals with what is from the standpoint of human life, efficiency, and happiness—the abnormal. Its ever surer diagnosis and its ever-extending research lead it to seek out not merely the symptoms, but the causes of what it regards as abnormal for the very reason that it is injurious. Its practical treatment seeks in like manner not merely to remedy or alleviate the symptoms, but to ascertain and, if possible, to eliminate their causes.

"The University has, as its very name suggests, universal science as its province. It deals with all the realities of actual and factual existence. From the standpoint of science, whatever *is*—that is to say, exists—must be treated, in the first instance at least, as normal. All the phenomena of our cosmic existence are *there*, and are organically related in the system and development of the world. For example, the most deadly bacteria, which are treated by medicine as the enemy, have their laws of nature in common with all the more pleasant and desirable phenomena of the universe. They must therefore be studied thoroughly and dispassionately by biological science. Adequate description, measurements, classification, and proximate explanation of the whole realm of existence lie within the realm of science, and therefore become a problem of the University.

"The State stands for authority, for the government, to use Lincoln's historic phrase, 'of the people, by the people, for the people.' In England at least, and until recent times, it was sought to limit the functions of the State to the interests of defence—external and internal. The State was responsible for securing the safety and the freedom, within limits, of its subjects. It had to safeguard their continued being. Yet, as experience has growingly shown, the being of the citizens of the State can only be maintained by ever-increasing and more comprehensive endeavours to promote their well-being. Even the Englishman has become convinced, however reluctantly, of this necessity. Hence, the State, which began for the most part by being remedial, has become increasingly preventive and constructive in its constantly multiplying tasks. It is therefore constrained to call to its aid all the available resources of science and art, of knowledge, and of practical skill. For the furtherance of its work it must turn ever more constantly to the outstanding representatives and centres of Science and Medicine."

Hence the interdependence of the medical school representing the art of Medicine, of the university representing Science, and of the State representing the authoritative and constructive government of the well-being of the people. Medicine as an art was dependent upon the whole range of the sciences. Primarily, of course, it must needs have regard to the sciences of physiology and biology. Yet the study of these led back to that of chemistry and, more remotely, that of physics. Nor could psychology be ignored, for in practice they were constrained to recognize the apparent influence of the mind, the emotions, and the will upon the bodily organs. All these were of primary importance, but, in the relations of medicine to public life and to the State, medical jurisprudence and even other subjects of science and political science were being brought within the orbit of medical education. Moreover, in the background the comprehensive subject of logic as training the students' reason to adopt truly scientific methods both of induction and of deduction. On the outskirts lurked philosophy ready, if need be, to be called in. Hence, it might be affirmed that, within practical limits, the wider and more thorough the scientific knowledge of the medical student became, the stronger background and the more effective instrument he would have for carrying on his remedial art. Both Medicine and Science in this close interrelation were indispensable to the State in its efforts to establish the conditions of being, and therefore of well-being. The State was becoming more and more constructive, and, in the true sense of the word, reforming. It had to secure the co-operation of all people of good will in the great enterprise of a continuous

refashioning of our collective life in order to realize the possibilities and to correct the incidental drawbacks attendant upon human evolution. As the State became constructive it cast the light of its great ideal over Medicine and Science. Medicine became increasingly not merely remedial but preventive. It treated the establishment of the conditions of health as the best prophylactic against disease. Science placed the entire range of its knowledge at the disposal both of Medicine and of the State for this great positive and constructive endeavour. On the other hand, the State was ever-increasingly compelled to call in the assistance of Medicine and Science in national and local administration in order to take account of and deal with the whole range of human environment. A transforming partnership of Medicine, Science, and the State was being brought about by their hitherto somewhat haphazard co-operation.

"What practical bearing, it may be asked, has all this upon the course and equipment of a medical student? The answer is simple, though the attainment is arduous. The medical practitioner must not only equip himself with adequate knowledge, but must train and discipline himself to certain mental habitudes which have underlying moral conditions. Humane sympathy, it need hardly be said, is the foremost requirement that is involved. A spirit of close, patient, and comprehensive observation must be cultivated. The ever-growing treasures of past experience handed down by tradition through teachers must be gathered up by the medical student, verified, and used in his practice, and eventually enlarged by his personal reaction to it. Promptitude, resourcefulness, and dexterity are essential. Constant vigilance and thoroughness are indispensable. If these are the qualities that are called out and exercised by strictly medical training, adequate scientific knowledge and a scientific outlook will bring breadth and a comprehensive vision, accompanied by grasp of the conditions that are involved and command over the resources that are available.

"The sense of obligation to the State will develop a truly social aim, a spirit of confident, though cautious, venture, and a disposition to seek organized co-operation in the service of public health. All this involves intense and patient human sympathy and the highest consecration which subordinates the desire of individual advancement, however legitimate, to the great social end of the well-being of the community that must become increasingly the ideal and inspiration of the medical man."

ST. GEORGE'S HOSPITAL.

ADDRESS BY LORD RIDDELL.

At the prize distribution to students of St. George's Hospital Medical School on October 1st, Lord Riddell gave an address entitled "Some things that matter for doctors from a layman's point of view."

Lord Riddell first touched on the relationship between medical profession and public. He said that the intelligent layman viewed with amazement and anxiety existing conditions regarding panel practice and the medical services generally. The panel doctor was a sort of medical slave, employed, or at any rate paid, by commercial or semi-commercial institutions. He must prescribe in accordance with certain rules. If these rules were transgressed he was subject to serious fines and other penalties. He was also subject to penalties if he were too free in granting certificates entitling patients to disablement allowances. On the other hand, the less he did for his patients the easier time he had. Except in cases of gross negligence there was no penalty for under-prescribing or inattention. Most of the insurance doctor's serious cases, and a good many that were not serious, were passed on to or drafted into the out-patient departments of the voluntary hospitals. The twelve London teaching hospitals alone treated every day about 12,000 out-patients, a large proportion of whom were on the panel. So great had the strain become upon some of these institutions that they had been compelled to require payment of a registration fee by out-patients. It would be interesting to discover how many of the fourteen million panel patients were treated largely at the expense of the charitable public, and for what diseases. Perhaps they would then find out what the panel patient got, or what it was possible for him to get, for the 9s. per annum paid to his doctor, plus the £10 16s. 8d. per annum per 100 patients allowed for drugs. It was certain that, but for the voluntary hospitals, the panel system would very soon break down.

Turning to the relation between doctor and patient Lord Riddell said that the public judged by results. Unfriendly critics of popular medical favourites might allege that their successes were due to luck, not to skill. This was futile criticism: mankind had always had confidence in lucky people. When the Romans had to choose between two generals, the senators said, "So-and-so is the better strategist. But So-and-so is loved by the gods; therefore we shall appoint him." Nevertheless it was dangerous to trust to a lucky star. Success depended on knowledge and the art of applying it; a reputation for skill was a valuable and enduring asset. With some diffidence he proposed to say a few words about medical education from a layman's point of view. First, he would suggest that notwithstanding the wonderful facilities for diagnosis provided by pathologists, biochemists, radiologists, and cardiographers, the searching medical eye was still the most important weapon in the doctor's armoury. Therefore every student should cultivate his powers of observation. Secondly, the intelligent laity viewed with some apprehension the tendency to treat the human body as a departmental store. Most organs had their own band of specialists. It seemed to the thoughtful layman that the medical student at any rate should regard the human body as an entity, "many members . . . but one body." Thirdly, a clear, concise method of expression should be cultivated for written communications. President Wilson was a master of this sort of style; his father insisted, when he was a boy, on his deleting every redundant word from what he wrote. It was amusing to practise this art, and astounding to see how much could be excised. Fourthly, sooner or later most doctors found themselves in the witness-box; therefore it was desirable for the student to pay some attention to the giving of evidence. There were a few maxims that might well be remembered. The witness should be prepared with his facts and technical information. When possible he should answer "Yes" or "No." He should not fence with the judge or counsel, but give his answers in a clear, direct fashion. He should keep his temper, and be genial and courteous under cross-examination. He should avoid using technical words when he could substitute language readily understandable by judge and jury. Fifthly, continuity was a great asset. The man who day in and day out did his work to the best of his ability, never turning aside because he was weary, bored, or unsuccessful, was certain to make an ultimate success. Furthermore, it was surprising how constant application would make the dullest subject interesting. A knowledge of statistics, charts, and graphs was important. A doctor should know how to construct these modern signposts. But the critical spirit should be well developed, together with adequate analytical methods. Statistics put forward by fanatics and enthusiasts should always be carefully scrutinized. As an instance of the need for caution Lord Riddell mentioned the maternal mortality statistics that so frequently figured in the press.

"We are told by a well-meaning, but ill-informed, group of ladies that our maternal death rate is much worse than the rates in certain foreign countries. The truth is that the statistics cannot possibly be compared, as each country adopts an entirely different method of making them up. Even our own figure, 4.3 per thousand, demands a good deal of investigation. This average is due in a great measure to the high death rate in a few districts, such as Wales, where the rate is 6.1 per thousand, and to the high rate in emergency cases at certain institutions, where the figure is sometimes 8 per thousand, due to the fact that the patients have been interfered with by abortioners, who have thus rendered them liable to puerperal diseases. In the City of Bradford (1921-23), for example, out of 125 deaths no fewer than 37 were associated with miscarriage or abortion. Furthermore, the death rate among unmarried mothers is very high, due to inattention, etc. On the other hand, at the East End Maternity Hospital, London, 17,525 cases were attended (1921-28) with only 12 deaths, or 0.68 per 1,000. I am not suggesting that our midwifery arrangements do not require improvement. I only mention these facts to show that general percentages are often misleading. If abnormal cases were excluded from our maternity statistics they would present a very different appearance."

Another important thing was the doctor's manner—important both as a therapeutic agent and as a means of securing practice. One thing was certain, superciliousness and inattention were fatal. Some people had natural charm, or the gift of inspiring confidence; but manner was largely also a matter of training. The cultivation of simple courtesy was a most important part of medical training. Another thing that mattered was the disclosure by the doctor to the patient of medical information. From time immemorial doctors had been in the habit of shrouding themselves with a sort of halo of mystery. In an irreverent and inquiring age, when even the most sacred haloes had been snatched off, the medical halo had not escaped public attention. The educated man or woman wanted to know what ailed him or her, more or less what the medical adviser proposed to do, and what course the disease was likely to take. In short, the patient wanted particulars of the diagnosis, treatment, and prognosis. In these days unwillingness on the part of the doctor to disclose these particulars was often regarded as evidence of ignorance. Needless to say, however, much discretion was necessary in the patient's interest. It might be better to be thought ignorant than to damp a patient's spirits by the communication of unpleasant facts. In no professional calling was tact more necessary. But an elaborate tactician who prided himself on his tactfulness was usually a dismal failure. Real tact, like good manners, was unobtrusive. Punctuality in keeping appointments and answering correspondence was, from a layman's point of view, most essential for a doctor. This characteristic depended on the art of organizing the day properly. A good organizer could make the most of himself and his time, whereas the muddler was always late and always driven. Finally, optimism, geniality, and a sense of humour were invaluable assets to a doctor.

Nova et Vetera.

DOCTORS' BILLS.

UNDER this somewhat crude title a letter recently appeared in the *Times*, the writer of which complained of the lack of details in medical accounts rendered. He, or she (for the signature consists of initials only), thinks that every patient is doubtful whether he has been fairly dealt with. It was not ever thus. In the eighteenth century the accounts of surgeons and apothecaries were full of details, and a "long bill" was a physical fact and not a mere manner of speaking. As long as advice was not charged for, and the only items of cost were for drugs supplied, the custom of retail trade prevailed, but when the apothecary became by Act of Parliament a medical practitioner (if not, like the attorney, a gentleman), he seems to have felt the ways of the shop degrading, and he went one better than the lawyer and sent in his claim for a lump sum for "attendance," and only gave dates and other details when they were asked for. An example of the old custom will be found in "A Doctor's Bill of 1824," published in this *Journal* on June 28th, 1930 (p. 1190). In this bill of Mr. William Burgess of Lostwithiel, very full particulars of drugs supplied and attendance rendered, with the dates, are given.

Through the kindness of Dr. Cyril Helm of Great Horkesley, Essex, we have now before us a much earlier bill, rendered by Mr. William Fairclough "to the Parish of Little Horkesley," for attendance on, and drugs supplied to, Mary Hardy at West Bergholt. There is no address on the bill, which is dated 1771, but a reference to the "Medical Register" for the years 1779, 1780, and 1783 (the only years for which that early directory is extant) shows that a Mr. William Fairclough practised at Nayland, just over the border in Suffolk. West Bergholt, Nayland, and the Horkesleys, Great and Little, are all within a circle of about two or three miles diameter on the Essex-Suffolk border. What the population of Nayland was in those days we do not know; in 1906 it was about 1,500, but in 1779 it supported three medical men, Messrs. Fairclough, Tomkins, and Leak, whose practices no doubt covered a large radius. Dr. Helm justly remarks that the charges seem high for the period, and, we would add, for a parish patient. The attendance extended from June 11th to August 2nd, and the total is £3 16s. 6d. Fifteen of the twenty-eight items are for journeys, and the remainder are mostly for decoction of bark, so that it seems possible that the case was one of ague. A journey was charged at 2s. 6d., and a "Decoction of the Bark, containing a Quart, 3s. 6d." This quantity only lasted the patient from three to six days, so that a fair amount of cinchona must have been absorbed.

It would seem that there was no salaried medical attendant under contract to attend the poor of Little Horkesley at that time, or else we should not have had this bill. It is, however, well known that long before 1771 various parish overseers made contracts with surgeons and apothecaries for attendance on the sick poor. In that delightful and learned work the *History of Hitchin*, by Mr. Reginald Hine, there are records of several such contracts in that old royal town of Hertfordshire. "In 1711 Joseph Thompson agrees with the townsmen of Hitchin, for a consideration of £3, 'to use his utmost endeavour in curing broken bones, dislocations, strains, tumers, swellings, fistula, gout, ulcers, chancres, and all other wounds or thinges whatsoever that belong to a surgeon'; while at a price just double that of the surgeon, the apothecary, Thomas Ward, covenants to 'take care of all the poor and use his best skill in cureing all fevers, smallpoxes, and all other distempers that belong to a physician.' On one of the later contracts, as if to justify the need of them, this couplet is endorsed:

> 'Because that word and faithe with no degree will stande,
> Therefor the Lawyer saithe, take writing of their hande.'"

There is much else in Mr. Hine's chapter on the poor, in his first volume, of interest to the medical reader. He concludes thus:

> "Looking back over these merciful interventions, one feels that the parish doctors were in act and deed the friends of the poor, for if by mischance they killed off a few of the King's sick subjects by their medicines, they saved many lives by foresight and sympathy in times of famine."

To turn again to Mr. Fairclough and his bill. There is no indication of its having been paid, so that perhaps his charges were above the usual scale, and he may have been beaten down by the overseers of the parish of Little Horkesley, and did not, after all, receive the sum of £3 16s. 6d.

Ireland.

Campaign Against Tuberculosis.

THE Village Settlement in connexion with Peamount Sanatorium, County Dublin, was recently opened by Mr. James McNeil, Governor-General of the Irish Free State, and the Women's National Health Association is to be congratulated on the successful conclusion of its endeavours in this respect. In 1906 the association commenced its efforts to combat the ravages of tuberculosis in Ireland; the death rate was then 2.6 per 1,000 of the people, nearly twice as high as that in England and Wales, but by means of propaganda and the establishment of sanatoriums in various parts of the country the association succeeded in limiting the extent of the disease. The death rate decreased consistently until 1914, when war conditions interrupted the fall; the rate again dropped during 1918, 1919, and 1920. Even so, no fewer than 50,000 persons in the Free State died from the disease during the period 1918-27. The late Sir William Thompson, Registrar-General for Ireland for twenty years, was from the first a strong supporter of the association. In the course of his investigations into the disease he visited the Papworth Settlement at Cambridge, and there saw the results achieved by Dr. Varrier-Jones. He brought the system under the notice of the Peamount committee, who were already anxious as to the fate of patients who, after a course of sanatorium treatment, were compelled to return to unsuitable conditions. Having considered the matter, the committee felt that the establishment at Peamount of a village settlement on the lines of Papworth was the best solution

of the problems presented in the eradication of tuberculosis in the Free State—the procuring of employment which would enable the patients to enjoy plenty of fresh air, the kind of work for which they were suited, the rest periods needed, and the food which their impaired constitutions required. Since 1918 Papworth's industries have sold more than £345,000 worth of goods manufactured by tuberculous employees, and have paid £135,000 in wages. The turnover in 1918 was £400; in 1929 it was £65,000. The village settlement at Peamount is a memorial to the late Sir William Thompson; dependent for the whole of its capital upon public donations, its rate of development will be governed by the orders it receives for the goods it produces, which include all kinds of portable wooden buildings, garages, bungalows, and poultry houses. The Governor-General explained how the settlement had been modelled on the Papworth institution, and added that it was now in a position to train tuberculous patients with a view to settlement. The Peamount institution has not, however, merely adopted the Papworth general policy and methods, though it had been built up under the personal supervision of Dr. Varrier-Jones; confidence is felt that the settlement, which is already on its feet, will with his further help stride out soon on its own account. The advantages of settlement treatment to the working man and his family are now recognized. The tuberculous patient is given the work he can do under proper conditions, and at a proper wage. His family and friends are saved from infection, and the risk of infecting the community is lessened. It was well known what poor men or women had to suffer, and how their whole outlook on life was darkened when protracted illness with incapacity to do regular work came upon them. The settlement would hasten the cure of tuberculous patients, and hold out to them a continuing hope. From being broken and hopeless they could be made healthy and self-supporting.

Sir Conway Dwyer, F.R.C.S.I., proposing a vote of thanks to the Governor-General, said that the essential object of the industrial settlement was to render permanent as far as possible the results of sanatorium treatment. As everyone knew, the disquieting factor in this treatment was the tendency to relapse after returning to the conditions and environment in which the disease had been contracted. It was to eliminate that result that what he might call shortly the Papworth system had been organized. The patients, at the conclusion of the sanatorium treatment, did not go home. They were provided with a new home, under ideal conditions, and resumed their occupations or were taught a new trade; their families resided in the settlement with them, and could earn enough, or nearly enough, to maintain themselves. Dr. Varrier-Jones emphasized the importance of the scheme of treatment in that it took away from the disabled that feeling of inferiority, and gave them an opportunity of looking after themselves in a suitable environment. The new workshop at Peamount was ten times as large as the first one in Papworth, which was erected ten years ago. Without such institutions there would be an ever-increasing number of men and women who would be a drag on the State and on private charity, but, thanks to such settlements, these disabled people would become self-supporting. The only thing they could not do was to pay dividends on the capital required for the workshops; for that the help of the charitably disposed was needed, and when the capital had been supplied the disabled men would be able to earn their own living. The goods produced by the settlement were sold on merit at the correct price, and they gave value for money. The more of these goods that were sold the more people could be treated, and the general community be saved from infection. Lady Aberdeen, asking the Governor-General to start the machinery in the workshop, said that ever since Peamount Sanatorium had been opened in 1912 the Women's National Health Association had cherished a dream of being able to devise some plan whereby patients who improved in health should be put in a position to earn their own living, instead of returning to conditions which would almost certainly revive the trouble, and make them again dependent on State assistance. They would see to-day this dream beginning to be realized. She hoped that the starting up of the machinery of that little workshop would bring in a new era in the treatment of tuberculous patients in Ireland, and would lead to the same success as that which had been achieved under Dr. Varrier-Jones at Papworth.

Proposed Sweepstake in Aid of Cork Hospitals.

A deputation of the governors of Cork hospitals waited recently on the Minister for Justice to obtain his sanction for the starting of a sweepstake in favour of some of the Cork hospitals. The Minister for Justice replied that, while he did not altogether favour the project, he had a perfectly open mind on the subject. Before he could give his sanction, under the Hospitals Sweepstakes Act, to any sweepstakes outside that already being promoted in aid of the Dublin hospitals, a very strong case would have to be presented. It seemed to him that the Cork hospitals would stand to gain more by taking part in the Dublin sweepstakes than by forming a separate one. Generally he was not in favour of having rival sweepstakes organized. If a good case were submitted he would consider it, but a strong case would be necessary to ensure the obtaining of a licence. He had not given any decision to the deputation from Cork, since the matter had only been discussed generally.

Scotland.

Scottish Board of Control.

The General Board of Control for Scotland, at the outset of its recently published sixteenth annual report,[1] records its high appreciation of the way in which the local authorities, now no longer in existence, have discharged their onerous duties, of the progressive and enlightened manner in which successive reforms and new methods of treatment have been adopted, and of the human sympathy which their members, collectively and individually, have always shown to the unfortunate patients under their charge. A considerable part of the report is devoted to occupational therapy. It is recalled that the Royal Commission of 1857 suggested that "there are few better curative agents in the treatment of insanity than agricultural labour when combined with an adequate diet." In accordance with these opinions the Board has encouraged the acquisition by institutions of farm and garden ground, and has generally recommended a minimum of one acre for each male patient. No special cognizance has hitherto been taken of the fact that there is scope for the employment of women patients in farm and garden work, provided that suitable instructresses are engaged to teach and supervise them. Such outdoor occupation would include light garden work, tending poultry, and milking, and would provide healthy exercise of much therapeutic value. In encouraging the acquisition of land by asylum authorities the Board has had mainly in view the object of providing therapeutic occupation and recreation for patients. It has never been intended that asylum farms and gardens should be run primarily as profit-making concerns, but most asylum farms not only pay rents, which cover the interest of money expended on their purchase, but usually have a considerable balance of net profit to apply towards the reduction of the cost of the maintenance of their patients. It may also be claimed that the farms and gardens furnish a more varied dietary and a better quality of food than would be obtained by purchase in the market. There is another aspect of the matter to which the Board directs attention—namely, the possibility of depositing, on behalf of those patients in whom there is a prospect of early recovery, some small remuneration based on their work in the hospital. This policy would give new interest and life to their work, and would also ensure for them a certain security on their discharge. Another part of the report deals with "carriers" of infections, such as enteric fever and dysentery. A special department for housing the enteric fever "carriers," which number thirteen, at the Govan District Asylum, is now in occupation. Reference is also made to the special work done in one of the Glasgow

[1] Edinburgh: H.M Stationery Office. 1930. Cmd. 3654. 2s. net.

asylums, where undulant fever was discovered, particularly among patients who had been doing farm work. The Board has had under consideration the hours and general conditions of service of the nursing staff in Scottish asylums. In commenting on the practice that prevails in France, where a definite eight-hour working day is laid down by law, it deprecates a too rigid application of this principle in a profession such as nursing, and points out that nurses in general and mental hospitals have not been included within the scope of the draft Convention of the International Labour Congress dealing with the question of a general eight-hour day for all workers. At the beginning of the present year, exclusive of insane persons maintained at home by their natural guardians, there were 19,059 insane persons in Scotland of whom the Board had official cognizance. This figure includes the inmates of training schools for imbecile children who have not been certified under the Mental Deficiency Act and of the criminal lunatic department of Perth prison. The total number of patients admitted to establishments (excluding transfers) during 1929 was 3,173, which is 136 fewer than in the previous year. The Board of Control has sent to the new authorities instructions relating to the working of the Mental Treatment Act, 1930. "Mental hospital" is to be substituted for "asylum"; this is now a statutory requirement. "Voluntary patient" is to be used instead of "voluntary boarder." The word "pauper" is forbidden in relation to any person of unsound mind, and is to be replaced by "rate-aided person." The word "lunatic" is eliminated except in relation to criminal lunatics and persons detained as lunatics outside Great Britain.

Pinel Memorial in Edinburgh.

A bust of Philippe Pinel was unveiled on September 26th at the Jordanburn Hospital, Morningside Park, Edinburgh, by M. de Fleuriau, the French Ambassador. The Jordanburn Hospital was recently established for the treatment of early mental uncertified cases by the managers of the Royal Edinburgh Hospital for Mental and Nervous Diseases. The preliminary meeting, before the unveiling of the bust, was held in the lecture hall of the hospital under the presidency of the Earl of Stair. Mr. T. M. Gardiner, chairman of the board of managers of the Royal Hospital for Mental Diseases, in welcoming M. de Fleuriau, pointed out that the foundation of the Royal Edinburgh Mental Hospital by Dr. Andrew Duncan towards the end of the eighteenth century took place while Pinel was agitating in Paris for the more humane treatment of the insane. Professor G. M. Robertson, physician superintendent of the hospital, said that after the termination of the Napoleonic wars young medical men from Edinburgh were attracted to Paris by the fame of its school. Two of the most famous among them were Sir Robert Christison and Dr. Andrew Combe, the physiologist and phrenologist. These men attended the lectures on mental diseases delivered at the Salpêtrière by Esquirol, the friend and pupil of Pinel, and they met Pinel and heard all about his great reforms. Twenty years later they were managers of the Edinburgh Asylum, about the time when it was decided to enlarge the institution. The West House was then built, and a bust of Pinel was placed over the entrance archway. This was the first memorial erected to the memory of Pinel and his work, for even in his native country a statue was not erected until 1885. The managers had now decided to commemorate the centenary of Pinel's death by placing a new bust in a prominent position. It was sometimes difficult to fix the exact time for the starting-point of any great philanthropic movement, but there was no difficulty in dating the introduction of the humane treatment of the insane. It was generally agreed that the movement began definitely in the year 1793, when Philippe Pinel struck off the chains of fifty-three insane patients at the Bicêtre Hospital in Paris. This was the year during which Paris was passing through the tragic experiences of the September massacres and the execution of the king and queen. Pinel's humane action had received sanction from Couthon, one of the most bloodthirsty ringleaders of the Reign of Terror. The reforms of Pinel also included all possible measures for improving the condition of the insane, such as the provision for better housing, warm clothing, good food, and the comforts of life. He also introduced more careful medical examination, and one of the first results was the discovery by his pupil Esquirol of the symptoms of the disease known as general paralysis of the insane, which might be regarded as the greatest discovery in mental medicine. Three years after Pinel began his reforms the Quakers of York independently established "The Retreat" in that city, also managed on the most humane principles. When the Edinburgh Asylum, proposed by Dr. Andrew Duncan in 1790, was opened for the reception of patients in 1813, it was conducted on the lines laid down by William Tuke at York and by Pinel in Paris. Since then progress had been continuous. In the course of his address, M. de Fleuriau said that this gathering was a recognition of the common work of French and Scottish physicians and nurses united in the treatment of the terrible disease of insanity. Philippe Pinel's work must be considered in the light of the eighteenth century. He was born in 1745, and had been educated at Toulouse and Montpellier, leaving the university with the reputation of a very learned and able man with great personal charm. Coming to Paris, he met many of the men who were playing a part in the movement out of which came the French Revolution. This was a movement for the betterment of humanity and conditions of life in France, and questions of teaching, education, hospitals, and treatment of the insane were all under discussion. When the Revolution broke out in 1789 many solutions of these questions had already been prepared, and the French revolutionary assemblies helped to initiate many reforms. The fault of the revolutionaries had been that they sometimes went too fast in their desire to obtain immediate results. Pinel had a long life, and in his later years he was one of the most celebrated professors of the Faculty of Medicine in Paris. M. de Fleuriau said he was very glad to have had the opportunity of expressing his respect for the memory of Pinel. The company then adjourned to the courtyard of West House, where M. de Fleuriau unveiled the bronze bust of Pinel, which had been draped with the French and Scottish flags. The bust is a replica of one in the Academy of Medicine in Paris. A wreath was placed on the memorial by the matron of the hospital, and Dr. Hamilton Marr proposed a vote of thanks to M. de Fleuriau, and Professor Patrick Geddes recited some verses that he had composed in honour of Pinel.

Glasgow Health Exhibition.

A housing and health exhibition was opened in Glasgow on September 24th by Mr. Thomas Johnston, M.P., Under Secretary of State for Scotland. Lord Provost Kelly, who presided, said that the interest which the public took in such exhibitions was manifest from the success of those that had previously been held. A special feature on the present occasion was the contrast in housing conditions shown by models of old and new houses. In declaring the exhibition open Mr. Johnston said that people were living healthier and happier lives now than their ancestors. Although there were still epidemics, there were no such conditions as when James Melville in the sixteenth century rode through the streets of Edinburgh and found only three persons abroad, or when James VI ran zigzag about the country to escape the pest. Many diseases had disappeared completely, such as typhus, malaria, and small-pox, while the diphtheria death rate had fallen in this century by one-half, and enteric fever was down to one-tenth of what it was thirty years ago. Summer diarrhoea, too, was gone, owing perhaps to the coming of the motor car and the disappearance of the horse from the city. The mortality rate of tuberculosis was one-half of what it was ten years ago. The Scottish death rate from all causes had fallen between 1881 and 1921 from 19.30 to 13.56. Some diseases, however, such as cancer, rheumatism, whooping-cough, and the common cold, had not yet been eliminated; in regard to rheumatism we were no further advanced than in the days of Hippocrates, though we did recognize that every death from disease to-day was an unnatural and avoidable death. There were many battle fronts in fighting disease, such as intemperance, venereal disease, smoke pollution, pestilential slums,

and adulterated food, but progress was being made. This exhibition marked an advance in the struggle against slums and against disease. He thought it was a disgrace that while £70,000 a year was being spent in Scotland on agricultural research and £20,000 on fisheries research, only £8,000 a year was being spent on research into diseases which afflicted the human being. In his opinion existing knowledge was not properly utilized, for there had been an absence of combined work in hospitals; he trusted that the regional committees recently set up would mean that certain hospitals would be set apart for providing specialized service in particular diseases, so that the latest fruits of research would be made generally available.

Glasgow Chair of Medical Paediatrics.

The Board of Curators of Glasgow University, on September 25th, appointed Geoffrey Balmanno Fleming, M.D., F.R.F.P.S., to the Samson Gemmell chair of medical paediatrics in Glasgow University, in succession to Dr. Leonard Findlay, who recently resigned the professorship. Dr. Fleming is 48 years of age, and, after graduating B.A. at Cambridge in 1908 and M.B. in 1910, he took the degree of M.D. in 1914 and became a Fellow of the Royal Faculty of Physicians and Surgeons, Glasgow, in 1926. After holding various resident posts he studied in Vienna, and later took up practice in Glasgow. He served throughout the war, retiring from the Territorial Service in 1920 with the rank of lieutenant-colonel. Since 1919 he has devoted his attention to paediatrics in the Sick Children's Hospital at Glasgow, where he was appointed assistant to Professor Findlay, and, later, Gow lecturer in the medical diseases of children at Glasgow University. Two years ago he became physician to the Sick Children's Hospital. He has made numerous contributions to current medicine.

Conference of Insurance Committees at Inverness.

A two days' conference of the Scottish Association of Insurance Committees opened in the Town Hall, Inverness, on September 26th, where about two hundred delegates from all parts of Scotland were welcomed by the provost and magistrates. Mr. A. A. Dick of Lanark county, who presided, said that the question of extending and developing the medical service under the national insurance system was at present being discussed with great intensity, and was nearing a climax. The British Medical Association had prepared a very carefully drafted scheme for a general medical service for the nation, and this was so opportune that it was bound to play an important part in determining the future official attitude. The question now was whether the people of this country should be medically treated by whole-time medical officers appointed either by local authorities or by the State, or alternatively whether the present scheme of medical service under the Insurance Acts should be widened so as to bring everyone within its scope, thus retaining the right of free choice of doctor, which was the essential feature of the national insurance scheme. He was inclined to subscribe to the principle that the family doctor was the foundation of any complete and efficient medical service, and that as there was no real distinction between the preventive and curative branches of professional work, every general practitioner should be associated with all health services. The passing of the old parish councils raised afresh, and in an acute form, the question of the future provision of medical service for the poor. He submitted that if the national insurance system was to be extended, local authorities through their public assistance committees might confer with local insurance committees and devise a method of contracting under the insurance system, whereby domiciliary medical attendance might be provided for those for whom local authorities were responsible. This would do away with the present segregation of the poor as such, and would preserve for them the valued right of free choice of doctor. Under such an arrangement payment would be made by the local authority into the pool from which the local committee drew its funds; he was convinced that the whole arrangement could easily be brought into operation if both sides were agreed, and he was sure that permission would not be withheld by the Department of Health. Even if legislative authority were necessary, this would be of a simple character. Mr. Dick also pointed out that institutional treatment was an essential part of a complete medical service; in this connexion increased facilities, greater efficiency, and proper co-ordination of existing institutions were necessary and urgent. Many insured persons as well as others demanded, and were able and willing to pay, a reasonable charge for accommodation. The private hospital or nursing home did not meet this need to-day, for charges were often excessive and even extortionate. In any case there was room here for an improved nursing service, which should be met in any scheme for general hospital accommodation. Private nursing institutions should also be subject to some kind of inspection and control as a safeguard against the exploitation of patients. They were told that the hospitals, both voluntary and council, were being used to an increasing extent by persons who would not, and should not, ask for charity; in the building of more hospitals provision should be made for patients who could pay and were willing to pay. A motion by Sir Henry Keith was carried to remit to the executive committee the consideration of the extension of domiciliary medical service with the object of making such service as comprehensive as possible. An address on the medical service in the Highlands and Islands was delivered by Dr. Shearer of the Department of Health for Scotland. He said that the improved conditions of medical practice in the Highlands and Islands had been of enormous benefit to the people. The provision of motor transport had made it possible to do in one day what had previously taken three or four days. Through the Highlands and Islands Medical Service Fund the poorer classes could get prompt and adequate medical attention, and the nursing services were now better. The medical services in these districts had been transformed, and a nursing service, which was an incalculable boon, was being steadily improved and extended. He referred also to the establishment of specialist services and to the modernizing of the Northern Infirmary at Inverness. He expressed the opinion that if the problems of the Highland medical services had been treated sectionally, progress would have come to an end, but now all over the world, in Kentucky, in Newfoundland, and in South Africa, the ideas which had been worked out and tested in the Highlands of Scotland were being adopted and applied to cognate problems.

England and Wales.

After-care of Defectives in Birmingham.

The report for the year 1929 of the Special Schools After-Care Committee for the City of Birmingham contains an account of some of the defective persons who have become either partially or completely self-supporting since going out into the world. Efforts have been made during the last three years to obtain information on the occupations commonly followed by defectives in the industrial life of the city, and it has been found that the numbers doing remunerative work are the highest since the committee was established. As many as 1,295 males and 716 females are now in work; the wages of the men range from 2s. to £5 per week, and of the women from 2s. to £2. In several cases defectives have remained in the same employment since leaving school, one having held a post as a domestic servant for the last ten years; the committee's visitor reports that others are much improved, and one is now attending an evening school. Occupations include engineering, both skilled and automatic, unskilled factory work, electro-plating, outdoor work, domestic service, and the sewing trades. Bootmaking and carpentry are two of the trades taught in the special schools, and it is of interest to note that fourteen are engaged in the boot trade and nineteen in different branches of carpentry. A number of children—namely, 222 males and 177 females—have been excluded from special schools during the past five years by reason of mental or physical disability; these are children who, after a varying period in the schools, failed to make any progress in education. Most of them remain

at home subsequently, but some of them attend occupation centres, others are eventually placed in institutions, and a few are able to find employment, though it is seldom long retained. The percentage of defectives doing remunerative work has steadily increased since the inception of the committee, and now amounts to 47 per cent.—a not unsatisfactory figure when the amount of general unemployment is considered. A special investigation has been made into the family histories of former pupils of the Birmingham special schools who were known to have married or to have had children; 376 children are noted as born of fathers who had been certified as mentally defective, and 270 of mentally defective mothers. Of 276 of these over the age of 5 years, fourteen are reported to be mentally or physically defective, and of the 370 below that age fourteen are said to be mentally subnormal or not in good health. In the younger group it is still too early to make an accurate diagnosis in the greater number of cases, but most of the older children are attending ordinary elementary schools. Delinquency among defectives is usually of a minor order, and in the records of the committee very few cases have been found which have been the subject of police court proceedings; the usual forms of delinquency noted are minor thefts, a tendency to wander, and, among the females, a liability to be victimized sexually. More than seventy children attend the four occupation centres, where useful training is given to low-grade defectives who cannot profit by the instruction at the special schools.

London Hospital Post-graduate Course.

The annual post-graduate course for former students of the London Hospital will be held this year on the four days October 15th to 18th. For each day, except the last, a full programme of lectures and demonstrations has been arranged. On October 15th Dr. Donald Hunter will lecture on vitamins; Dr. W. J. O'Donovan on the major skin infections of childhood; Mr. Hugh Lett on the enlarged prostate; and Mr. Hugh Cairns on the treatment of trigeminal neuralgia. There will be demonstrations of cases treated by radium, surgical operations, and ward demonstrations during the afternoons, and Dr. George Riddoch will discuss the diagnosis and treatment of Parkinsonism and will show cases. On the second day Dr. Maitland-Jones will lecture on some nutritional disorders in infants; Mr. C. B. Goulden on injuries to the eye; Mr. Eardley Holland on some common obstetrical problems; Dr. Russell Brain on some causes of pain in the leg; and Dr. O. Leyton on diabetes. Mr. Victor Lack will hold an ante-natal clinic in the afternoon, and the annual dinner of the London Hospital will be held that evening, as already announced in these columns. Lectures on the third day will be given by Dr. T. Lumsden on immunity in relation to malignant disease; Mr. Alan Perry on infections of the hand; and Mr. G. E. Neligan on cystitis. Mr. Norman Patterson will demonstrate cases and specimens; Dr. A. E. Clark-Kennedy will give a ward demonstration on dyspepsia; and Mr. H. S. Souttar will deliver the Schorstein Memorial Lecture on radium in the service of surgery. It is proposed that a demonstration by Dr. Daly on methods of anaesthesia shall be held in the evening. The course will conclude on Saturday morning with lectures by Dr. G. Vilvandré on some pitfalls in *x*-ray diagnosis, and Mr. A. J. Walton on the present state of thyroid surgery. Mr. Russell Howard will conduct a ward demonstration. In addition to the course here outlined, there will be operations in the theatres each afternoon from 1.30 onwards and demonstrations in the wards.

Children's Sanatorium, Harpenden.

The Children's Sanatorium at Harpenden, Herts, which was built in 1910 as a special branch of the National Children's Home and Orphanage, provides facilities for medical treatment along with the amenities of home and school life. About seventy tuberculous children between the ages of 5 and 14, including those whose health has been seriously impaired by early privation and neglect, can be received in the present building, but larger accommodation is expected to be available at an early date in anticipation of fuller co-operation with local authorities. The sanatorium is recognized by the Ministry of Health, the Ministry of Pensions, and the Board of Education, and possesses equipment for study and recreation all the year round. Among its facilities are an open-air school, fitted with sliding panels and movable partitions, playgrounds, playing fields, and play-sheds for use in bad weather. A number of revolving outdoor chalets have been erected in part of the surrounding gardens, where plots of land are cultivated by the children themselves. Wide, open verandahs run round the whole of the frontage of the main building, which consists of two floors of wards, day rooms, a central dining-room, a consulting-room, and a surgery. This building has been named Wakefield House, in recognition of the sympathy and generosity of Lord Wakefield of Hythe. Particular attention is given to dietary, exercise, and to matters of personal hygiene. The records of the sanatorium, to which Dr. T. N. Kelynack is visiting physician, suggest that these natural methods of treatment result in a high percentage of success when they are applied systematically and at the right time.

Correspondence.

INTERNATIONAL CO-OPERATION IN HEALTH: THE RHEUMATIC DISEASES.

Sir,—Your welcome editorial on the health work of the League of Nations in the *Journal* of September 27th (p. 536) clearly shows how much strength our medical art may derive from international co-operation, and also how great a contribution it is now in a position to make to the economic and social problems of the world. Least of all the great vocations can the Medicine of the future be exclusive, insular or national. May I add my small tribute to this newly acquired value, from a personal experience of ten years in rather active work in the field of physical medicine? I refer to the serious study of physical remedies in all civilized countries, which are in the first place especially the remedies of the health resort, and which, of course, find their ruling indications in the treatment of incipient and chronic disease.

During the past five years a large number of workers in chronic rheumatic diseases have been organized as a small international league for combating these diseases. Their first object, in the words of Miss Lawrence—speaking of the League of Nations organization—is "the study and collection of information." But in the case of rheumatism investigation must go hand in hand with a careful study of treatment, partly because the sick man cannot wait and partly because it has been shown that the close observation of large numbers of cases *under treatment* throws much light on the morbid process and quickly establishes a therapeutic differentiation.

The health activities directed from Geneva have often, as you point out, led to rapid and most beneficial results. In the case of rheumatism also, we believe that a wisely directed co-ordinated effort will be much more fruitful than any isolated efforts. The constant international interchange that has been established between workers on rheumatism has already effected a much-needed understanding between sections of the medical profession. The young cardiologist or bacteriologist, keen on his "scientific" work, has been brought into contact with other categories of fact, the contribution perhaps of much older students and clinicians. *Pace* Mr. Wilfred Trotter, they have learned that scientist and clinician are not mutually exclusive terms. Both schools have during the past week studied together the disturbances of circulation and bodily heat which characterize the development of many rheumatic illnesses and which call aloud for investigation.

It fell to me at the second rheumatism congress, just concluded, to lay before my colleagues at Liège the call to co-operation. "How essentially similar . . . are the problems which confront us all." In dealing with these sometimes baffling medical problems, with their serious economic and social aspects, co-operation is necessary all along the line; first between sections of the medical profession, then between ourselves and other organizations

concerned with social and economic welfare, and lastly between nations, with their own individual genius, experience, and energy.—I am, etc.,

London, W.1, Sept. 29th. R. FORTESCUE FOX.

X-RAY AND DIATHERMY TREATMENT OF TONSILS.

SIR,—There have been several letters in the *Journal* recently about the *x*-ray treatment of tonsils. As I had been using this method for some few years, and probably treated over a thousand cases, my results may be of some use to readers. At the Rockefeller Institute for Medical Research in 1919, Drs. Witherbee, Murphy, Craig, Hussey, and Stern treated forty-six patients from 3½ to 45 years of age by *x* rays. The result of the work showed that within one month of starting treatment no colonies of haemolytic streptococci or staphylococci could be found in tonsils in which before they had been present. My own results were not so good, so I supplemented the *x* rays by one-minute exposures to the ultra-violet lamp, application of the high-frequency electrode, and the use of a vaccine prepared from the organisms present in the tonsils.

With two treatments a week over two to three months I was able to get very good results. The tonsils shrank and became pale, and no secretion could be expressed from them. In about 90 per cent. of cases results were very satisfactory. A few resisted all treatment, and during the next four or five years a few returned with a recurrent infection. Patients who have had their tonsils treated, and find them, years later, as bad as they were originally, feel very badly used; I therefore scrapped the method, and during the last three years have employed diathermy, using a unipolar method off a Schall machine. I mention this machine as I have not heard of any other by which this method can be applied. With a needle protruding a good quarter of an inch from a glass rod a tonsil can be dissected out, as with a knife, except that the operation is bloodless, or the needle can be entered to its full depth and moved slowly backwards and forwards across the tonsil, cutting its way through and destroying all in contact with it. Least reaction and discomfort is produced by doing half a tonsil at a sitting. The operation does not prevent the patient carrying on with his daily work; it can be applied to elderly folk with weak hearts as long as they are able to come to one's rooms. One can do as much or as little as one wishes, and there is no uncertainty as to how deep one is burning. Full current is used and only one electrode employed. Where *x*-ray treatment is used alone, even if good results are obtained, the tonsils are bound to be reinfected in the presence of dental or naso-pharyngeal infection.

The fact that the tonsils of about 90 per cent. of people are infected does not mean that the condition is normal, and we do well to eliminate all sources of the streptococcal infection; at present much harm is being done by removing tonsils and leaving nasal infections.—I am, etc.,

Melbourne, Victoria, Aug. 11th. SYDNEY PERN.

SUCTION IN TONSILLECTOMY.

SIR,—In your report of the proceedings in the Section of Anaesthesia of the British Medical Association Annual Meeting (*Journal*, September 27th, 1930), I have read with interest the references made to the prevention of respiratory complications after tonsillectomy. It is surprising that no single anaesthetist has mentioned the value in this connexion of suction to prevent accumulation of mucus and blood in the air passages.

A very simple apparatus of low cost can be erected in any operating theatre whereby a constant suction can be maintained during operation. This consists of a modified Bunsen water pump attached through a suction bottle to a Yankauer tube. The tube can be manipulated by the anaesthetist, and can most effectively be made to remove the blood from the site of operation. It can be kept free from clotted blood by dipping occasionally into a sterile solution of sodium citrate. Operations, particularly dissections in adults, are rendered comparatively simple, as anaesthesia can be pushed with safety to full relaxation without fear of the inhalation of blood. Efficiency is greatly increased, as a full view of each step in the operation is obtained. Constant recourse to sponging is obviated, and bleeding points can, if necessary, be clamped with ease. The patient is allowed to regain his cough reflex before leaving the table.

I think it will be found that the dangers and complications of the operation are reduced to a minimum and the ease of operating increased a hundredfold.—I am, etc.,

Bedford, Sept. 28th. G. A. METCALFE, M.A., M.B., B.Ch.

RADIUM TREATMENT OF RODENT ULCER.

SIR,—During the last year I have treated a considerable number of rodent ulcers and have seen the resultant after-effects, which, in the majority of cases, are in the form of a smooth scar. If unscreened applications were used, containing either radium element or radon, treatment for a few hours sufficed, but it was found necessary to screen the surrounding healthy skin with lead, otherwise a burn developed. If, however, tubes screened with 0.6 mm. of platinum were used, then treatment needed to be prolonged for six days, and no protection of the surrounding skin was necessary.

The introduction of a platinum screen, with consequent filtration of the beta radiation, necessitating a much longer exposure, is, I think, proof that the beta radiation is the effective agent in the treatment of rodent ulcers with unscreened tubes; while the necessity for protecting the surrounding skin with this type of treatment shows that these radiations possess no selective action on malignant tissue.—I am, etc.,

Manchester and District Radium Institute, Sept. 22nd. SYLVIA B. WIGODER, Assistant Radiologist.

PERSONNEL OF A RADIUM CLINIC.

SIR,—It would be churlish on my part not to acknowledge the extreme courtesy of Mr. Duncan Fitzwilliams's reply to my letter. That he deliberately omitted to include the radiologist from his team would hardly have crossed my mind, knowing as I do that there are quite a number of people in London and in the provinces whose expert knowledge of dosage and of the biology of radium is invaluable. That the radiologist was to be excluded from taking his proper place in the future administration of radium was all too evident until Scotland showed us the way. I will not dwell upon this, other than to remark that there was some just reason for my previous comments.—I am, etc.,

London, W.1, Sept. 26th. STANLEY MELVILLE.

TECHNIQUE OF INJECTING VARICOSE VEINS.

SIR,—Dr. Charles McCash, in his letter on this subject (*Journal*, September 20th, p. 498), states that in using sodium morrhuate "its oily nature renders thorough cleansing of the syringe between injections more difficult." In my experience it is extremely easy to clean a syringe after using this solution, as its very nature tends to act as a cleansing agent in removing all traces of blood, etc., from its interior. The reason is that sodium morrhuate is chemically a soap, being the sodium salt of an unsaturated fatty acid. As used in solution form for injecting veins it is an aqueous solution of sodium morrhuate that is generally utilized, not an oily solution. The sodium morrhuate is also generally a "neutral soap," and contains no uncombined free fatty acid and no uncombined oil.

The soapy nature of the solution can be proved easily by the fact that if one puts a little of it in the hand and adds water one can wash the hands with the resultant lather. In my letter to the *Journal* of August 23rd (p. 303), I referred to the "oily" nature of sodium morrhuate acting as a lubricant, whereas the term "soapy" would have been more correct, chemically speaking.

Dr. McCash states that he uses short or bevel pointed needles and finds them of great use. Personally I gave up using them some time ago, as I found that, owing to their more blunt nature, they tended to push some veins aside rather than enter them directly, unless the vein was firmly fixed.—I am, etc.,

Leicester, Sept. 27th. F. A. E. Silcock, M.D., D.P.H.

PYREXIA OF UNCERTAIN ORIGIN.

Sir,—Regarding Dr. W. H. Palmer's letter in your issue of September 27th (p. 543), I had a case a fortnight ago which was very similar to his series. The patient was a boy, aged 10, and presented all the signs and symptoms mentioned by Dr. Palmer. In addition, he had oedema of the upper eyelids and some phlyctenules on his conjunctivae. There was a trace of albumin in the urine, and a blood count showed a deficiency of polymorphs, being otherwise normal. Recovery was uneventful.—I am, etc.,

Llansamlet, Swansea, Sept. 29th. T. J. Evans.

Sir,—The symptoms described by Dr. Palmer in your current issue would suggest that these cases may be mild septicaemic cerebro-spinal meningitis, such as I have recently seen here and am publishing records of. Most of these cases are exceptionally difficult to confirm unless a relapse occurs, or meningitic signs set in, or a definite case is recognized in the vicinity.—I am, etc.,

Eustace Thorp, M.B., L.R.C.S., D.P.H.

Borough Sanatorium, Sunderland,
Sept. 30th.

NECROPSIES BY GENERAL PRACTITIONERS.

Sir,—I am interested in this subject, having been a practitioner covering extensively the whole field of medicine, midwifery, and gynaecology, as well as surgery in all its specialties. This, I presume, would entitle me to the term "a general practitioner." To this, among other things, was added the performance of roughly from 100 to 150 medico-legal post-mortem examinations yearly, and the giving of evidence in court on these cases.

When I commenced I was no better nor worse qualified for the job than the average general practitioner. As it was a very important part of my work I had to undertake an intensive study of the subject, so that, on the one hand, I might be an efficient witness in the interests of justice, and that, on the other hand, I should not look a fool when confronted with judicial advocates who knew the subject well. In my first few cases I did not feel comfortable in the witness-box, and I learnt there what courts required—a thing not taught in any undergraduate school. I would have been much more comfortable if I had had a special post-graduate course of instruction in necropsies *and evidence*. I do not wonder that general practitioners do not like this work when so very little of it comes their way. Reading the reports of such cases, it seems to me that it would be in the interests of justice (as matters stand) that some one or two of the medical members attached to the county councils should do this work, having previously attended a special course of instruction in the subject, one of the teachers being an experienced judicial advocate.—I am, etc.,

Henry Smith, C.I.E.,

Sidcup, Sept. 23rd. Lieut.-Colonel I.M.S. (ret.).

Sir,—May I deal with the more relevant protests which my letters on this subject have evoked?

The first and most telling objection is that valuable professional experience would be lost to the general practitioner if he ceased to perform post-mortem examinations. The answer to that is that he would gain rather than lose in pathological knowledge by watching them performed by others more skilled than himself. We do not complain of losing valuable surgical experience because we send our operation cases to hospital. And almost certainly the co-operation of the general practitioner would be required, for surely no necropsy can be complete unless the pathological findings are correlated with the symptoms exhibited during life.

The second and less valid objection is a general protest against the invasion of the practitioner's domain by anything that savours of specialism. This is where the acid test of efficiency is applied, and no argument of the possessive or sentimental order can stand against it. Would the work be done better by a change in organization? If it would, then the change is bound to come, and we should be doing a public disservice by opposing it.

The third objection, if indeed I read Dr. Gibson correctly (September 20th, p. 499), is that we have, or ought to have, sufficient pathological knowledge to perform necropsies efficiently ourselves. I agree with Dr. Gibson that we leave hospital with perhaps as much pathological as medical or surgical experience, but there the resemblance ends. The practice of medicine and surgery is our daily round; we make mistakes, and strive not to make the same mistake twice. When we encounter a puzzling case we can ponder it at our leisure, discuss it with colleagues, or consult works of reference. But with an isolated post-mortem examination I contend that we have no such opportunity, nor can we have, however keen and interested we may be. At a single examination we must come to a definite conclusion from unfamiliar material. We must make a pronouncement on oath, and perhaps withstand a searching cross-examination. Does Dr. Gibson seriously believe that one necropsy a year (a fair average for a country doctor) is sufficient to maintain a satisfactory knowledge of pathological anatomy and post-mortem appearances? Surely not. Although, unlike most of us, he appears perfectly satisfied with his own ability in post-mortem examinations, he will no doubt agree that if he had twenty times as many to perform he would become even more skilful. That is the whole of my argument. Where twenty men will do one examination each and do it badly, one man will do the whole twenty and do them much better.

I certainly do not envisage the total exclusion of the ordinary doctor from all post-mortem experience. My conception is that some practitioners would undertake these examinations just as some do a certain amount of ophthalmic work, or any other specialty, and by some such system of centralization all the doctors of a district would have the same freedom of access to their local mortuary as they now have to the operating theatre of their local hospital. They would thus have a far better opportunity of learning pathology than they have with their present annual necropsy.

That there is any objection to the removal of bodies to a mortuary is contrary to existing experience. This is the usual course in many large cities, and gives no offence that I have heard of. If the body is in a rural district twenty miles from a mortuary, it merely means an extra two hours' absence on the journey.—I am, etc.,

September 22nd. Rusticus.

DESICCATED HOG'S STOMACH IN PERNICIOUS ANAEMIA.

Sir,—The following case is, I think, worth recording. The patient is a man, 67 years of age, who was put on liver treatment on receipt of the following report of the blood:

October 11th, 1929.—Haemoglobin 38 per cent., colour index 1.2, red corpuscles 1,576,000 per c.mm., white corpuscles 3,200 per c.mm., polymorphs 59 per cent., lymphocytes 34 per cent., large mononuclears 4 per cent., eosinophils 3 per cent. Nucleated reds present (megaloblasts 5 per cent., normoblasts 2 per cent.). Polychromasia present. Marked variation in size and shape of red cells.

January 6th, 1930.—Haemoglobin 72 per cent., colour index 1.1, red corpuscles 2,832,000 per c.mm., white corpuscles 3,200 per c.mm.

March 3rd, 1930.—Haemoglobin 84 per cent., colour index 1.4, red corpuscles 2,984,000 per c.mm., white corpuscles 4,200 per c.mm.

The patient had now been four months under treatment, and, as things seemed rather at a standstill, he was put on ventriculin, as suggested by Dr. Renshaw in your issue of February 22nd, beginning with 10 grams and gradually increasing the quantity given, until in a week he was taking 30 grams daily.

April 28th, 1930.—Haemoglobin 92 per cent., colour index just above 1, red corpuscles 4,316,000 per c.mm., white corpuscles 4,400 per c.mm.

June 6th, 1930.—Haemoglobin 86 per cent., colour index 1, red corpuscles 4,984,000 per c.mm., white corpuscles 5,800 per c.mm.

After this report the amount of ventriculin was reduced to 20 grams a day.

On July 18th, 1930, the laboratory report was:

Haemoglobin 92 per cent., colour index 1, red corpuscles 5,040,000 per c.mm., white corpuscles 6,400. Differential count: Polymorphs 70 per cent., lymphocytes 20 per cent., large mononuclears 7 per cent., eosinophils 1 per cent. Practically no variation in size or shape of red cells. No nucleated red cells seen.

He was then advised to reduce his ventriculin to 10 grams a day. He seems quite well, and has resumed his usual occupation. There is no doubt that the change from liver treatment to ventriculin was a great factor in hastening his recovery.—I am, etc.,

Exeter, Sept. 22nd. C. E. STOKES.

HARVEY'S *DE MOTU*.

SIR,—In the issue of the *British Medical Journal* for September 20th, there is an article (p. 491) entitled "Dr. William Harvey," which deals with the catalogue of "Old Medical, Botanical, Chemical, and Alchemical Books," lately issued by the Internationaal Antiquariaat at Amsterdam. In the article we are asked, "Why did he [Harvey] . . . send the manuscript of the *De Motu* to be printed at Leipzig . . . ?" But Harvey sent it to Frankfort (on-the-Main), for we read on the title-page of the first edition—"Francofurti, Sumptibus Guilielmi Fitzeri, Anno M.DC.XXVIII."—I am, etc.,

London, Sept. 27th. D. FRASER-HARRIS.

*** The learned Harveian who contributed the article writes: When the Rev. Dr. Burgon asked advice of Dr. Routh, the old, old, very old President of Magdalen College, Oxford, as to the best course for him to pursue in literature, the venerable President—no doubt with a twinkle in his eye, for Burgon's slapdash methods were well known in the University—replied, "Sir, verify your references." Dr. Fraser-Harris does well to point out that I omitted to do so, but the mistake is so glaring that it is clearly a mere slip of the pen. No Harveian would attribute the Fitzers to Leipzig, but the question still awaits an answer.

Obituary.

PHOEBE MILDRED BIGLAND, M.D., M.R.C.P.,

Consulting Physician, Liverpool Dispensary for Women.

THE all too early death of Dr. Phoebe Bigland on September 24th, at Rodney Street, Liverpool, removes from medical circles in that city one whose place will be hard to fill.

Obtaining the M.D. degree of the University of Liverpool at a comparatively early age, she became M.R.C.P.Lond. in 1919, and her record includes appointments in both cities. She had been house-surgeon at the Royal Free Hospital, London, and she held a similar appointment in the Stanley Hospital, Liverpool, where during the war she became acting physician. She was successively medical tutor and registrar and temporary honorary assistant physician at Liverpool Royal Infirmary, and honorary assistant physician at the Liverpool Chest Hospital. On the academic side she held successively the appointments of John W. Garrett Fellow in Pathology, demonstrator in pathology, and assistant lecturer in the same subject. Turning to another field she became assistant school medical officer. The appointments she held at the time of her death reflect her special interest in the diseases of women and children, including as they did honorary physician, Crofton Convalescent Hospital; honorary consulting physician, Liverpool Dispensary for Women and Children; medical officer, Infant Welfare Clinics; assistant, Venereal Diseases Department, Royal Infirmary; and medical officer in charge, Mothers' Welfare Clinic.

Her contributions to medical literature began in association with the late Dr. O. T. Williams in 1912. The subject in which she specially interested herself in later years is shown by her contribution in 1922 to the ninth annual report of the Board of Control (with Watson and Bigland) on the influence of syphilis in mental cases, followed by an article in the *Lancet* in 1924, with the same collaborators, on the relation between general paralysis and somatic syphilis; the effect of treatment on the Wassermann reaction of syphilitic patients, contributed to the Medical Research Council Report of 1926 (with E. E. Glynn); and studies connected with the same subject which appeared in the *British Journal for Venereal Diseases* in April, 1927. Her sympathy with students and her insight into their special difficulties will be gratefully remembered by numbers of ex-students of Liverpool University. Her fellow practitioners marked their appreciation of her loyalty to the interests of medical women and her strenuous work on their behalf by making her president of the Liverpool Association of the Federation of Medical Women, and her ready wit and quick grasp of essentials will be remembered by the council of the Federation of Medical Women, of which she was for many years a member.

She married Dr. Douglas Bigland in 1917, and her charming hospitality and the happiness of her home life will be a grateful memory to a very wide circle of friends. Those among whom she worked will appreciate her loss most acutely. For the husband and two children whom she leaves behind her premature death is a tragedy.

Dr. ARTHUR HOLT of Chingford died on September 16th at St. Leonards-on-Sea, at the age of 67. His medical education was obtained in the University of Glasgow, where he graduated M.B., C.M. in 1895. He then practised for some time in Heywood, where he took a special interest in puerperal septicaemia, and strongly supported a movement among medical practitioners for the instruction of midwives in the use of antiseptics. He was also largely concerned in introducing bimanual compression for post-partum haemorrhage. Failure in health then necessitated his taking a sea voyage, after which he undertook general practice in London. During the war Dr. Holt's house in Lewisham was struck by a bomb; the whole family escaped, but the shock to him was so severe that he never fully recovered. He retired from practice four years ago, but subsequently resumed at Chingford. A colleague writes: Dr. Holt endeared himself to his patients by his conscientiousness and by the deep interest he took in the nature of their illnesses. As a friend he was sincere and faithful. In company he was genial and full of humour; no one could tell a story better, and no one could do it the same way. He was buried at Cheshunt on September 22nd, where his wife had been laid two years earlier. He leaves one daughter and two sons.

Mr. WALTER EDMUNDS of Putney, who died at Worthing on September 23rd, at the age of 80, received his medical education at Cambridge and St. Thomas's Hospital. He graduated M.B.Camb. in 1875, and proceeded M.Ch. in 1877; in this year also he received the diploma F.R.C.S.Eng. by examination. He took part in the Turko-Russian war of 1877–78 as surgeon, and was later appointed surgeon to the Prince of Wales's General Hospital, Tottenham, being subsequently elected consulting surgeon. He had been a member of the British Medical Association and of the Ophthalmological Society. In 1901 he delivered the Erasmus Wilson Lecture to the Royal College of Surgeons. He took a special interest in diseases of the thyroid gland, and published many contributions on this subject.

The following well-known foreign medical men have recently died: Professor DEODATO DE CARLI, professor of oto-rhino-laryngology at Naples, aged 55; Professor HJALMAR FORSSNER, a Swedish gynaecologist, aged 57; Dr. KARL BAYER, professor of surgery at the German University at Prague, aged 76; Dr. N. JANSKO, professor of internal medicine at Czeged, aged 61; Dr. PAUL PRYM, extraordinary professor of pathology and morbid anatomy at Bonn, aged 48; and Professor JOHANN FABRY, a dermatologist of Dortmund, aged 62.

The Services.

DEATHS IN THE SERVICES.

Surgeon Captain Douglas Duke Turner, R.N. (ret.), died in the Royal Naval Hospital, Haslar, on August 4th, aged 53. He was educated at St. Thomas's, took the M.R.C.S. and L.R.C.P.Lond. in 1900, and, after filling the posts of house-surgeon and house-physician of the Victoria Hospital for Children, Chelsea, and of assistant medical officer of Paddington Infirmary, entered the navy as surgeon on May 23rd, 1904. He was promoted to staff surgeon after eight years' service, and to surgeon commander in June, 1917, and retired with an honorary step of rank as surgeon captain in March, 1927. During the war he served as medical officer of the cruisers *Sappho* and *Devonshire*, and after the war in the cruiser *Concord*, in the battleship *Resolution*, and in H.M.S. *Defiance*, torpedo school ship at Devonport.

Colonel George James Hamilton Bell, C.I.E., Bengal Medical Service (ret.), died in Edinburgh on July 9th, aged 61. He was born on February 28th, 1861, the son of Robert Bell, Sheriff Substitute of Stirling, Dumbarton, and Clackmannan, and was educated at Edinburgh Academy and at the University in that city, where he graduated as M.B. and C.M. in 1882. Entering the I.M.S. as surgeon on April 1st, 1886, he became colonel on June 16th, 1915, and retired on August 20th, 1920. He served in the Burmese war in 1887–89, receiving the Frontier medal with a clasp, and in the Lushai expedition on the Eastern Frontier in 1889 (clasp). He then got civil employment in Bengal, but before long was transferred to Burma for service in the Jail Department there, of which he became inspector-general. In June, 1915, he was appointed Inspector-General of Civil Hospitals in Burma, but towards the close of that year was transferred to the same post in Bihar and Orissa on the death of Colonel F. J. Drury. He received the C.I.E. on June 2nd, 1914. In 1890 he married Violet Helen Mary, daughter of Lestock Reid Forbes, Esq., and had a son and two daughters.

Captain Edward Chandler, R.A.M.C. (ret.), died at Aberstoke on June 14th, aged 86. He was born at Alston, Cumberland, on October 14th, 1841, was educated at Charing Cross Hospital, and took the L.R.C.P.Lond. in 1862 and the M.R.C.S. in 1863. He entered the A.M.D. as surgeon on April 14th, 1863, became surgeon major on April 1st, 1873, and retired on half-pay on February 4th, 1875, his designation being changed to surgeon captain in 1893 and captain in 1898. In the old regimental days he served in the Royal Artillery, and after retirement was employed for some years as medical officer of the military prison at Gosport. He served in the New Zealand war of 1864–66, receiving the medal. He must have been one of the oldest retired medical officers, if not actually the oldest.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE Geoffrey E. Duveen Travelling Studentship in Oto-rhino-laryngology, of the value of £450, will be awarded annually. The tenure of the studentship shall be, in the first instance, for one year, part of which will be spent in study abroad, in accordance with a scheme to be approved by the Board. The tenure may be extended for one or two years, and during such extended period the student may be allowed to undertake research at the Royal Ear Hospital or some other laboratory approved for the purpose. Grants for promotion of research in oto-rhino-laryngology, or in any part thereof, may also be made from the trust fund of the benefaction. No person shall be qualified for election to the studentship or to receive grants from the fund until he or she has obtained the degree of M.B. and B.S. in the University. Applications should be made on the prescribed form, obtainable from the Academic Registrar of the University, London, S.W.7, to whom they should be sent by December 21st, 1930, together with a statement of the nature of the research proposed and a scheme of study.

A Paul Reitlinger Prize of £30 for the best essay embodying the result of some research work on a medical subject carried out by the candidate will be awarded on December 3rd, 1930, provided there be a candidate of sufficient merit. Candidates must be matriculated students who, on June 1st preceding the award, were studying in one of the schools of the University in the Faculty of Medicine, or graduates of the University who, on the same date, were of not more than five years' standing from the date of taking their first degree, and who are or were students in such school. Regulations of the award of the prize may be obtained on application to the Academic Registrar.

The next award of the Rogers Prize of £100 will be made in 1931. The subject selected is "Filterable viruses as a cause of disease in man." The prize is open for competition to all persons whose names appear on the *Medical Register* of the United Kingdom. Copies of the regulations, including information regarding the date in April by which entries must be received, and any further information, may be obtained on application to the Academic Registrar.

KING'S COLLEGE.

Four lectures on metabolism of the carbohydrates and fats will be given by Dr. J. A. Hewitt on Thursdays, October 16th, 23rd, 30th, and November 6th, at 5 p.m. Admission is free without ticket.

UNIVERSITY COLLEGE.

The session 1930–31 opens at University College on Monday, October 6th. First year students of the Faculty of Medical Sciences will be received between 10 a.m. and 1 p.m.; those of later years between 2.15 p.m. and 4 p.m.

Mr. J. C. R. Hindenach, M.B., Ch.B., and Mr. C. P. Bryan, M.B., B.Ch., have been appointed demonstrators in the department of anatomy and embryology.

Among the public lectures arranged for the first term are the following: "Introduction to the theory and practice of experimental embryology" (two lectures), by Professor H. Spemann of the University of Freiburg; "The reticulo-endothelial system" (four lectures), by Dr. H. P. Gilding; "The respiratory functions of the blood (four lectures), by Dr. L. E. Bayliss. The complete programme, giving particulars of these and other lectures open to the public without fee or ticket, may be had on application to the secretary of the College. A stamped addressed envelope should be enclosed.

WESTMINSTER HOSPITAL MEDICAL SCHOOL.

The following prizes have been awarded:

Chadwick Prize for Clinical Surgery, J. G. Stewart and Miss R. T. Davies, equal; Class Prize in Surgery, D. H. H. Thomas; Chadwick Prize, G. J. Griffiths; Abrahams Prize, W. P. Jenson; Sturges Prize, E. S. Lee; Frederick Bird Medal and Prize, G. J. Griffiths; Hanbury Prize, E. S. Lee; Class Prize in Midwifery, D. G. Gower; Class Prize in Medicine, Miss I. Curphey; Class Prize in Forensic Medicine and Toxicology, W. Dear; Class Prize in Public Health, Miss E. Curphey; Class Prize in Bacteriology (Dr. Hicks's Prize), Miss G. E. Matthews.

UNIVERSITY OF LEEDS.

THE following candidates have been approved at the examinations indicated:

M.D.—I. Berenblum, Elsie G. M. Ford, Bessie Goodson, D. Perk.
CH.M.—D. W. Currie.
FINAL M.B., CH.B.—*Part I*: B. W. A. Fleming, L. Glick, F. C. Leach, N. W. Roberts, R. E. Tunbridge, Lilian I. Walker. *Part II and Part III (New Regulations)*: G. M. Holliday, I. J. Keidan, *J. Shernovitch, S. Silman. *Part II (Old Regulations)*: *B. S. Platt. *Part III (Old Regulations)*: M. Goodman, J. N. Hill, G. Hirst, G. J. Marks, B. S. Platt.
D.P.M.—J. J. Graham, G. C. Morris.
D.P.H.—Rosie R. Becker, E. J. S. Bonnett, A. R. Doyle, J. L. M. Wood, Rester E. de C. Woodcock.

* Awarded second-class honours.

The West Riding Panel Practitioners Prize for proficiency in medicine was awarded to J. Shernovitch.

Medical News.

THE annual reunion dinner of the London (Royal Free Hospital) School of Medicine for Women will be held at the Savoy Hotel on Thursday, December 4th, at 7 for 7.30 p.m. The honorary secretary of the dinner committee is Miss Sibyl T. Widdows.

THE annual dinner of the staff and past and present students of the Royal Dental Hospital of London will be held at 7 p.m. on Saturday, November 22nd, at the Trocadero, with Dr. Harvey Hilliard, C.B.E., in the chair. The Medical Committee will be "at home" to all past and present students of the hospital on the same day from 9.30 a.m. to 5 p.m. In the morning demonstrations will be given by members of the staff and lecturers. In the afternoon orthodontic and other cases of special interest from the clinic of the hospital will be shown; the various departments of the hospital and school will be open for inspection. All medical practitioners are cordially invited.

THE twenty-sixth annual dinner of the Birmingham and District Edinburgh University Club will be held at the Queen's Hotel, Birmingham, on Thursday, October 23rd, at 7 p.m. The chair will be taken by Professor J. C. Brash, and Professor John Fraser of Edinburgh has consented to be the guest of the club. Membership of the club is open to all male graduates of the university, and any who would like to attend the dinner and have not received details of it are requested to write to the honorary secretary, Dr. Ernest Bulmer, 87, Cornwall Street, Birmingham.

THE Annual Dinner of the Chelsea Clinical Society will be held on Tuesday, October 28th, at 7.30 p.m., at the Rembrandt Hotel.

THE opening meeting of the Torquay and District Medical Society for the session 1930–31 will be held at the Torbay Hospital on October 16th, when a paper will be read by Dr. W. Langdon Brown on the present position of endocrinology.

A MEETING of the Biochemical Society will be held in the Biochemical Laboratory, Cambridge, to-day (Saturday, October 4th), at 3 p.m., when papers will be read and demonstrations given.

AT the opening meeting of the St. Pancras Division, to be held in the British Medical Association's House, Tavistock Square, on Tuesday, October 14th, at 9 p.m., Sir Harold Gillies will give a lantern demonstration of methods and results in plastic surgery.

THE Grenfell Association of Great Britain and Ireland has arranged a meeting to be held at the Mansion House, on Thursday, October 16th, at 3 p.m., under the chairmanship of the Lord Mayor of London. Sir Wilfred Grenfell, K.C.M.G., M.D., will give an account of his work in Labrador, and Field-Marshal Viscount Allenby will also address the meeting.

A MEETING of the Illuminating Engineering Society will be held at 15, Savoy Street, Strand, W.C.1, at 6.30 p.m., on Wednesday, October 8th, when a report on progress in illuminating engineering, prepared by the Technical Committee, will be presented, and exhibits illustrating recent developments will be displayed.

THE French Society of Orthopaedics will hold its annual meeting in Paris on October 10th, when the following subjects will be discussed: coxa vara of adolescents, introduced by Dr. Huc of Paris, and obstetrical paralysis of the upper limb, introduced by Dr. André Rendu of Lyons.

THE Fellowship of Medicine announces that there is still one week of the intensive course in medicine, surgery, and the special departments at the Metropolitan Hospital. From October 6th to 25th there will be a special course in ear, nose, and throat diseases at the Central London Throat, Nose and Ear Hospital, consisting of a clinical course, an operative class (limited), and a pathology class. At the Chelsea Hospital a course in gynaecology will continue from October 13th to 24th. The Fellowship of Medicine has arranged an evening course of seventeen lectures suitable for (though not confined to) candidates for the M.R.C.P. examination. The first lecture will be delivered on Tuesday, October 7th, by Dr. L. J. Witts, who will describe recent work on the liver; the second lecture, also given by Dr. Witts, on October 10th, will deal with blood diseases. The lectures will be given at the Medical Society, 11, Chandos Street, Cavendish Square, W.1, at 8.30 p.m. At the same place a course of evening demonstrations for the F.R.C.S. (final) will be given one day a week for six weeks at 8.30 p.m., beginning on October 8th, and consisting of demonstrations in clinical surgery and pathology. Four demonstrators will attend each evening, and will provide two cases each. The fee for the course is £5 5s., and, contrary to the statement made on the syllabus itself, it must be paid in advance; tickets cannot be issued at the lecture hall. Particulars and syllabuses of all courses may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A POST-GRADUATE course has been arranged at the Royal National Orthopaedic Hospital under the auspices of the Fellowship of Medicine, and will be held from October 27th to November 8th. Daily lecture-demonstrations will be given by the staff at 11.30 a.m., except on the two Saturdays, when visits will be paid to the Brockley Hill Country Hospital. Those taking part in the course are specially invited to attend the operative and out-patient practice of the hospital each day. The fee for the course is 3 guineas, and applications should be sent to the secretary of the hospital, 234, Great Portland Street, W.1, or to the secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1, in either case by October 20th. The minimum entry is ten.

A COURSE on diseases of the heart and vessels will be held at the Hôpital Broussais, Paris, under the direction of Dr. Laubry from October 13th to 25th. The fee is 150 francs, which should be sent to Dr. Mevel, Hôpital Broussais, Rue Didot 96, Paris XIV.

A COURSE of ten lectures on the prevention of accidents, disorders, and disease will be delivered in the lecture hall of the Royal Institute of Public Health, Russell Square, W.C.1, on Wednesday afternoons, at 4 o'clock, from October 15th to December 17th. In the first lecture Dr. E. Graham Little will discuss the prevention of accidents, disorders, and disease in members of the medical and nursing professions. Professor Lazarus-Barlow will deal with the prevention of precancerous states and the arrest of cancer in the second lecture; Lieutenant-Colonel J. A. A. Pickard will give the third lecture, on the prevention of street accidents, and will illustrate the subjects with lantern slides. The remaining lectures in the series will relate to the preventive aspects of tuberculosis, venereal disease, accidents in workshops, tropical disorders, mental illness, and industrial diseases. The lectures are free to medical practitioners. The Harben Lectures will be delivered at the Institute on October 6th, 7th, and 8th, at 4 p.m., by Professor W. H. Park, director of the Bureau of Laboratories, New York City; his subject will be pneumonia. The annual congress of the Institute in 1931 will be held in Frankfort during Whitsuntide. Further particulars may be obtained from the honorary secretary of the Institute, 37, Russell Square, W.C.1.

A COURSE of twenty-four lectures for general practitioners on psychological types and mechanisms opened on October 1st at the Tavistock Square Clinic for Functional Nervous Diseases, 51, Tavistock Square, W.C.1. The remaining lectures of the course will be given by Dr. Crichton Miller and Dr. Graham Howe on Wednesdays at 3 and 4.30 p.m. from October 8th to December 17th inclusive. The fee for either series is £1 11s. 6d., and for both £2 2s.

THE seventeeth annual French Congress of Hygiene will be held at the Institut Pasteur, Paris, from October 20th to 23rd, under the presidency of Professor Delépine, member of the Académie de Médecine. The following subjects will be discussed: successive changes in French pharmacopoeias, introduced by Professor Delépine; comparative statistics of infantile mortality, introduced by Dr. Lesage; study of the reports of health offices, by MM. Aublant and Prunet and MM. Brocquin-Lacombe and Bonnet; and hygiene and reconstruction in the inundated districts in the South of France. Lectures will be given on psittacosis by Professor Sacquéfée, and on Lavoisier as hygienist by Dr. Dujarric de la Rivière. Further information about the congress can be obtained from Dr. Dufaure, Institut Pasteur, 28, Rue Dutot, Paris XV.

THE thirty-seventh Congress of the Italian Society of Surgery will be held in Rome from October 13th to 16th, when the following subjects will be discussed: treatment of craniocerebral trauma apart from gunshot wounds, introduced by Egidi and Giacobbe of Rome and Alberti of Brescia; and the diagnosis and treatment of haematuria, introduced by Lasio of Milan and Ferrata of Padua.

MR. K. J. ACTON DAVIS, consulting orthopaedic surgeon to the London County Council, gave a lecture on the treatment of the modern cripple child at a meeting of the cripple superintendents and helpers of the Shaftesbury Society which was held at the Central Hall, Westminster, on September 24th. He warmly commended the action of this society in establishing residential homes and schools for cripple children between the ages of 2 and 16, and as a result of his own experience was satisfied that such treatment enabled patients to return benefited to their homes and then to continue to improve. The voluntary workers of the society had proved particularly useful in ensuring the co-operation of the parents, and instructing them how the best results could be obtained. Emphasis was laid by the superintendent of the society's cripple department on the importance of discovering early cases of crippling defect, so that children could receive surgical attention before the disability had progressed too far.

THE Save the Children International Union, Geneva, has decided to form a section for preventive paediatrics. This will be composed entirely of physicians, and will deal with the scientific study of the prophylaxis of children's diseases and related questions of organization and instruction. Its headquarters will serve as an information and liaison centre for physicians and others who are interested in child hygiene and who may wish to make interstaff exchanges or undertake studies in other countries. The lines upon which this new section is to be conducted have been fixed by a number of well-known paediatrists, including Professors Lereboullet (Paris), Parsons (Birmingham), Valagussa (Rome), Schlossmann (Düsseldorf), Hamburger (Vienna), and G. Scheltema (Groningen, Holland). Professor Scheltema has undertaken the work of organizing the section and is temporarily in charge of its secretariat; further information may be obtained from him.

DR. F. FELIX JONES, on his retirement after fifty years of practice at Llanfyllin, Montgomeryshire, has been presented by the inhabitants of the borough of Llanfyllin with a silver tray suitably inscribed; by the Llanfyllin Board of Guardians with a framed illuminated address and album of subscribers' names; by the indoor staff of the Llanfyllin Poor Law Institution with a silver cigarette case; and by the inmates with a silver flask.

DR. J. R. LORD, C.B.E., F.R.C.P.Ed., medical superintendent of Horton Mental Hospital, Epsom, and lecturer in clinical psychiatry, London (Royal Free Hospital) School of Medicine for Women, has been appointed by the Minister of Health a member of the General Nursing Council for England and Wales.

WE have received the first issue, dated September, 1930, of *Kinderärztliche Praxis*, a quarterly journal edited by Professor St. Engel of Dortmund and Dr. E. Nassau of Berlin, and published by Georg Thieme of Leipzig at the price of 7 marks. Its aim is to provide the general practitioner, paediatrist, and hygienist with information as to recent progress in all branches of paediatrics.

THE Minister of Health, the Rt. Hon. Arthur Greenwood, M.P., has appointed Miss E. M. R. Russell Smith to be his assistant private secretary; and the Parliamentary Secretary to the Ministry, Miss Susan Lawrence, M.P., has appointed Mr. S. F. S. Hearder to be her private secretary.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are ***MUSEUM 9861, 9862, 9863,*** and ***9864*** (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

? CHEIROPOMPHOLYX.

"SYMINGTON" asks if any of his professional brethren can assist him in tracing the cause of a dermatitis that occurs in his hand now and then. It starts with a benumbed feeling about and between his fingers, followed by intolerable itching, papules, and small vesicles, which become pustules, then lymphangitis and enlarged glands in the axilla, and seems to defy all remedies. It has been called gout, rheumatism, neuritis, etc., by specialists. He understands it has affected other medical men.

PYLORIC CANCER: REMISSION OF SYMPTOMS.

MR. A. P. BERTWISTLE (London, W.1) writes: In reply to "Wicklow's" inquiry in the *Journal* of September 13th (p. 455), two possibilities occur to me as regards the case recorded; only an operation could clinch the diagnosis. In the first place the case may be one of benign gastric neoplasm; the Mayo Clinic states that as many as 2 per cent. of gastric tumours are benign. A polypus in the pyloric canal would cause spasmodic pain in the stomach, gaseous eructations, loss of weight by starving, possibly haematemesis and melaena, and a "filling defect" on radiographic examination identical with that of cancer. In the second place, is the case one of gastric syphilis? Since these cases do not often come to necropsy, little is known of them, though there is considerable literature on them in France, and Carman mentions them in his work on radiology.

ANHYDROSIS AND ABSCESS.

DR. R. H. THOMSON (Uphall, West Lothian) writes: In reply to Dr. Johnston McNab's inquiry on September 13th (p. 456), I have had three cases similar to those reported by Dr. A. Kendrew on September 20th (p. 504), as the result of using a well-known and much-advertised proprietary depilatory. One patient was especially ill, being confined to bed for fully three weeks. High temperature and rapid pulse continued, even after the abscesses had been incised and drained. I feared that a general septicaemia might ensue; however, the patient made a slow but good recovery.

INCOME TAX.

Valuation of Property.

"G. L. B." points out that the forms now being issued require taxpayers to state whether their houses are occupied solely as private residences or partly for business or professional purposes. Will that fact affect the valuation to be made for income tax, Schedule A?

*** No doubt the authorities desire to have as full particulars of the premises as possible, but the basis of valuation is the letting value in open market, and the purpose for which the premises are used seems immaterial, unless it indicates some special site value.

Payment of Capital by Instalments.

T. S." has purchased a share in a partnership on terms which allow him to discharge the capital sum by instalments consisting partly of principal and partly of interest on the principal outstanding. Can he deduct the amounts of interest for income tax purposes?

*** The interest should be specifically shown as deductions in the statement of total income from all sources in the space provided for "charges on income." But "T. S." will have to pay tax at the standard rate on that interest. On the other hand, when he pays the interest, he should deduct tax from it at the standard rate, so that in the end the tax will have been suffered by the recipient of the interest and not by himself—as, of course, is the proper result.

LETTERS, NOTES, ETC.

PASTEURIZATION AND MILK-BORNE EPIDEMICS.

MR. P. B. TUSTIN, technical adviser to United Dairies, Ltd., and formerly chief of Food and Dairy Division, City of Winnipeg, writes: I note in your issue of August 16th (p. 255) an article on the pasteurization of milk in Canada, referring to the annual report of Dr. A. J. Douglas, medical officer of health for Winnipeg. You say, "Experts in Great Britain will prefer to think that where adequate precautions have been taken pasteurization is needless." There have been three recent milk-borne epidemics in Great Britain. The paratyphoid outbreak in Kensington was due to raw cream, the outbreak of sickness among Leeds school children was traced to raw milk, and the outbreak of septic sore throat at Brighton was due to raw milk. Dr. D. Forbes, the medical officer of health for Brighton, points out in his annual report for 1929 that in his view pasteurized milk is the only designated milk which gives protection to consumers. I know of no milk-borne epidemic in this country that has been traced to properly pasteurized milk or cream. The figures in the official report of the United States Health Service for 1926–27–28 on milk-borne epidemics, including outbreaks of typhoid, paratyphoid, septic sore throat, scarlet fever, diphtheria, gastro-enteritis, and Malta fever, are as follows:—1926: 68 epidemics, 3,363 cases, 95 deaths; all reported as caused by raw milk; 1 of septic sore throat at Hamden, Conn., due to certified milk. 1927: 36 epidemics, 952 cases, 41 deaths. 1928: 43 epidemics, 2,129 cases, 94 deaths; all reported as caused by raw milk, none to pasteurized milk.

PREGNANCY AND CERTIFICATION.

DR. D. C. MURRAY PAGE (Pittenweem, Fifeshire) writes: In connexion with the note from "H. R." on "Pregnancy and Certification" (*Journal*, September 20th, p. 504) may I relate my sole experience regarding this matter. In July a married panel patient asked to be signed on the panel, since she was seven months pregnant, and her insurance agent told her that she was entitled to benefit. She was quite fit, and working away in the house and baiting fish lines every day. I told her that I did not think she was entitled to benefit, but that I would write to the Scottish Board of Health for advice. In his reply the Secretary to the Department of Health for Scotland said that no woman was entitled, on the occasion of her confinement, to receive sickness or disablement benefit as a matter of right prior to confinement. These benefits could only be paid if there was incapacity for work, and that condition must be satisfied in every case. The society's agent had misinformed the insured person, and I understand that he was properly dealt with by his superiors.

UNOFFICIAL AUNTS.

MRS. E. W. HARDY (7, Darley Avenue, W. Didsbury, Manchester) writes: The Voluntary Unofficial Aunts will be pleased to help in the following and similar ways: (1) To stay in the house in charge of children to enable the parents to go out together for an hour or two. (2) To take children out, or to the doctor, dentist, hospital, etc. (3) To visit old or feeble people, read to them, or play a game with them, and so occasionally to give relief to the one in charge. (4) To sew or mend garments sent to these "aunts" unable to do outside work. The "V.U.A." are purely voluntary workers, anxious to help, but not qualified in any way. They accept no responsibility, but will do their best to be of service, although, of course, they are not prepared to replace ordinary domestic labour or trained nursing. Anyone desiring to help, or to be helped, should apply to me.

CORRIGENDA.

The Mechanism of Swallowing.

WE regret that the concluding remarks by Mr. John F. O'Malley in the discussion on this subject before the Section of Radiology at Winnipeg were erroneously recorded in the *Journal* of September 20th (p. 486). The sentence should have read as follows: "He had pointed out some four years ago that in the human foetus at five months the epiglottis was in the nasopharynx, which was the position in the adult whale and alligator, and such animals had no difficulty in swallowing without any falling over of the epiglottis."

In our report of the discussion on functional disorders of the colon (September 20th, p. 474) Dr. Hugh Barber of Derby was incorrectly described as coming from London.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 51, 52, 53, 54, 55, 56, 57, 61, and 62 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 58, 59, and 60.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *159*.

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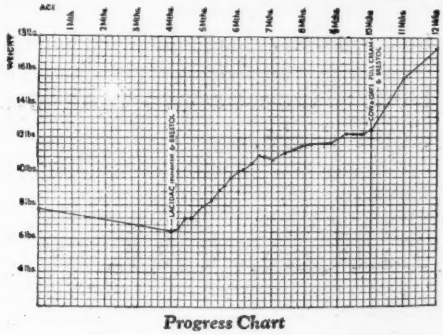
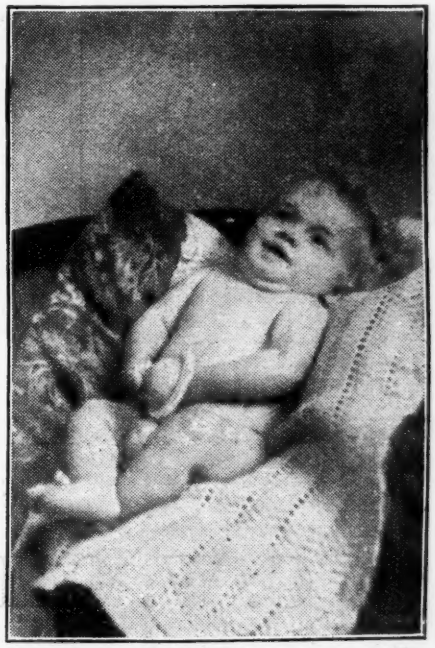


Progress Chart



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Printed and published by the British Medical Association, at their Office, Tavistock Square, in the Parish of St. Pancras, in the County of London.